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BIRD-BANDING

A Journal of Ornithological Investigation

Vol. XVII April 1946 No. 2

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BIRD-BANDING

A JOURNAL OF ORNITHOLOGICAL INVESTIGATION

VOL. XVII APRIL 1946 No. 2

WHAT CAN A BIRD-BANDER CONTRIBUTE TO ORNITHOLOGY TODAY?

BY RICHARD LEE WEAVER

There is an unusual opportunity for bird-banders today to increase the value of bird-banding and enlarge the body of ornithological literature by undertaking a more definite program of research and use of banding records and techniques.

Most of the problems concerned with the migration routes, the resident status and distribution of species, and the speed of migration, have been solved. Longevity studies offer some incentive for conscientious banders, but by far the greatest challenge lies beyond these studies in which so many of the answers have been found.

There is a large field of research relatively untouched by many banders—that of life history and behavior study through the banding and special work on individual birds. The emphasis then becomes one of close observation and study of individuals, rather than wholesale observation of migration. This type of work requires many new techniques and some knowledge of what has already been done. You will want to save time by using the most efficient methods and by not repeating research already completed.

If you have been following some of the recent life history and behavior studies, you know that the successful ones are all based on marked birds. The people making these studies have had to use some of the methods which the banders have worked out. In fact, many of the special techniques involved in trapping difficult species and in getting the bands adapted originated with banders. Some of the techniques used in marking birds today originated with the research student who needed an easy method for capturing or identifying individual birds. Thus we have the colored bands, the pluming and the feather imping used to such an extent now.

As to the need for life history and behavior information, may I point out that detailed studies of many of our common birds have not been made. A few such as the Red-winged Blackbird, Song Sparrow, Tree Sparrow, Ovenbird, Cowbird, Field Sparrow, Starling, English Sparrow, Goldfinch, Robin, Bluebird, Snow Bunting, House Wren, Mourning Dove, Bob-White, Wren-tit, Flicker, and a few others have received special attention, but many of the others are waiting to be studied. Such northern species as the Redpoll, Siskin, Pine and Evening Grosbeaks, Crossbills, Purple Finch, all of the summer nesting Warblers, the Sandpipers, Gulls, Swamp Sparrow, Chipping Sparrow, Sharp-tailed Sparrows, Grasshopper and Henslow's Sparrows, Rose-breasted Grosbeak, Scarlet Tanager, Grackles, Orioles, Bobolink, the Vireos, Shrikes, Kinglets, Veery, Hermit Thrush, Catbird, Marsh Wrens, Red-breasted Nuthatch, Rough-winged Swallow, Pewee, Kingbird, Sapsucker, Kingfisher, Nighthawk, and Swift are all birds which need attention. Definite information on the various parts of them and the life history is often unknown. The study of the behavior patterns of individuals of these species has not been started in most cases. So you see the field is wide open for you.

Here are some general directions if you are interested:

1. *Make accurate observation* by using a good prism binocular or telescope, or, the best glass you can get.
2. *Take copious notes and keep accurate records.* Memory is not to be trusted on such matters. Have a pocket notebook for field notes and a permanent one at home for your records. No matter how trivial the observation seems at the time, it should be recorded in writing as it may fit in with some later observation and help clarify otherwise puzzling behavior.
3. *Mark your birds* by aluminum bands, colored bands, or colored feathers so that birds can be identified without retrapping. Aluminum bands could be dispensed with if the number of individuals involved were not too great. You can make your own colored bands by a process described by Butts in *Bird-Banding* Magazine in 1930. You can use pluming in many cases for temporary identification which Baumgartner described in *Bird-Banding* in 1938, and which was further discussed and modified by Wright in *Journal of Wildlife Management* in 1939.
4. As for the *trapping of the birds*, I can assume that you are all experts at this and know where to look for additional information.
5. *Use outline bare maps* when conducting a study on a restricted area, for charting actual occurrence or movements of individuals. They are essential for habitat, population, and territorial studies. Rough sketches with important habitat types and landmarks will usually suffice, and can be mimeographed at small cost.
6. Blinds for close observation and photography are often necessary. Chapman in his Handbook (1932) describes an umbrella blind which is easy to make. You can also design one of your own with materials at hand.
7. *Pictures* of significant actions or habits are helpful. They should be distinctive and should assist the worker in portraying the techniques or unusual behavior, rather than duplicating the many fine pictures already in print.

LIFE HISTORY TOPICS

If you want some special help on how to undertake a life history or behavior study, I suggest you read A. A. Allen's Chapter XIX in his book of bird life entitled "Suggestions for the Intensive Study of a Species," or that you review Mrs. Nice's book, "Studies in the Life History of the Song Sparrow." Ralph Palmer's recent work on the "Behavior of the Common Tern" and Tinbergen's work on the "Behavior of the Snow Bunting" will give you many suggestions for similar studies. Eugene P. Odum has summarized many of these suggestions in a very helpful article in the "Oriole," Journal of the Georgia Ornithological Society of September, 1941, entitled, "Technics in Life History Study." He includes an excellent selection of references for each of the topics suggested. These topics include:

Pair-formation	Nest building
Territory	Egg laying
Incubation	Hatching
Development of young	Dispersal of young
Number of broods	Nesting success
Parasites	Molting
Seasonal movements	Voice
Roosting habits (night roosting)	Flocking and social behavior
Habitat selection	Population
Food habits	Predators and other Ecological relationships

I would like to conclude with this statement—that life history and behavior studies are not too difficult for the average bander, that they can be broken down into small parts so that a definite accomplishment can be made by most of us, and that banders generally have a very significant contribution to make in the field of ornithology if interested, and willing to engage in such challenging work.

Audubon Nature Center,
R. F. D. 4, Greenwich, Conn.

NOTES ON THE BEHAVIOR OF A NESTING NIGHTHAWK

BY G. HAPGOOD PARKS

During the dark, showery days of late May and early June, frequent glimpses of an Eastern Nighthawk *(Chordeiles minor minor* (Forster)) flying by the windows of the Physics laboratory at Weaver High School in Hartford, Connecticut, suggested that the bird might be nesting, or preparing to nest, nearby.

A visit to the extensive flat roof of the school was made on June 13, 1945, and there, near the most northerly edge, a female nighthawk was discovered. The bird allowed me to approach to within fifteen feet before she sprang into the air. After less than a half-dozen wing strokes she alighted again on the roof, scarcely farther from me than the point whence she had started, and there she lay quietly, eyes almost closed, apparently unafraid.

Two days later, June 15, a single egg was found, grayish in color, mottled with slate and brownish spots. The egg lay directly upon the round, pebble-like cinders which covered the asphalted surface of the roof. Many of the cinders were daubed with bits of dried black asphalt and were about the size of medium peas. The egg blended almost invisibly among them.

The nighthawk was not visited the next day, but on June 17 a second egg lay beside the first. Both were identical in appearance except that one was slightly larger than the other. The nest, if we may call two eggs a "nest," was located in a niche approximately two feet square formed by the cement blocks which protect and ornament the entire edge of the roof. This particular niche was at the northeast corner of the roof, and, as a result, the nesting bird was sheltered on all sides except the south. The protecting blocks rose about two feet above the level of the roof. Except for about three hours at midday the cement blocks shaded the nest from the direct rays of the sun, but there was no protection from directly overhead.

Upon the occasion of each succeeding visit the bird allowed me to approach to within about ten feet before springing off the nest. Usually there was a repetition of the tactics noted during the first visit. In one instance, however, the bird, after alighting from her short flight, moved along the roof with both wings spread. Then the right wing was folded and the left one was dragged as if broken. It was evidently an attempt to attract me away from the nest, but the bird showed neither nervousness nor fright and the display lasted less than a minute. During this time she moved not more than five feet along the roof.

On June 20 a flat trap was set over the eggs. Less than fifteen minutes later the bird entered the trap and was captured. She struggled considerably in the trap, but the eggs were not harmed. Her feathers were very loose and several of them, small body feathers as well as coverts from wings and tail, were left in the trap and in the gathering cage. She was very quiet in my hand, however, and submitted passively to banding. Band No. 44-201539 was used.

Never previously having handled a bird of this species, I was particularly impressed by the characteristically swallow-like appearance of her head and beak. In the bright sunlight her over-large eyes were kept blinkingly open only to the width of a mere slit. Her feet provided

the greatest surprise of all. They were so tiny and so weak for a bird of her size. After examining them I had no longer any reason to wonder why she rested her body snugly upon the ground the moment she alighted, or why her rare movements afoot, even over short distances, were usually assisted by her ample wings. The feet reminded me much more of those of a squirrel than of a bird.

Released from a window of the third-floor laboratory the banded nighthawk swerved almost immediately and flew back into the room through another open window. After fluttering against the ceiling for a moment she settled to the floor, where I picked her up. Upon being again released she disappeared into a mixed grove of maples and oaks.

Through June 27 daily visits provoked the same reactions on the part of the bird as have already been described: an upward spring from the nest, a couple of wing strokes, a quiet settling back upon the roof nearby, and not the least display of fright or annoyance.

On June 28, however, instead of settling back upon the roof the bird flew high into the air and soared around for about five minutes, twice giving voice to the typical cry of a nighthawk on the wing. Although I moved to the extreme opposite end of the large roof the bird alighted in a maple tree some hundred yards away instead of returning to the nest. There was no evident cause for this change in behavior so far as I was able to ascertain. The possibility that the female's mate may have been spelling her on the nest at the time of this visit was given consideration, but I was unable to detect any typical male markings on the flying bird. On this date it was first noticed that some of the cinders had been pushed aside, forming a slight depression in which the two eggs rested. Whether this hollowing had been deliberately done or whether it was the natural result of the presence of the brooding bird at this spot for so many days could not be determined.

The nest was not visited on June 29, but at eleven o'clock on the morning of June 30 the nighthawk's behavior showed a very distinct change. She left the nest as usual, alighted as usual upon the roof, but, instead of remaining quiet, she spread her wings wide apart, opened her beak to reveal a surprisingly cavernous pink mouth, and approached, more imploringly than menacingly, to within less than eight feet from where I was examining the eggs. Her wide-open eyes were unbelievably large. Pausing, she extended her wings as far as possible sideways and forward until the tips of their primaries touched the roof at points forward of her head. There, supporting her weight chiefly on her wing tips, she rocked her body and tail to and fro while the wings remained almost motionless. As she faced me thus she gave an almost perfect impersonation of a very mad (but very docile) snapping turtle. This impersonation became all the more

realistic when she uttered a hiss which differed from that of a snapping turtle only in that it was a bit more throaty, or guttural. Consistent with the bird's entire previous behavior this vocal contribution appeared also to be more like a new entreaty than like a challenge or a threat.

As I returned my attention to the nest I noticed for the first time that the shell of the larger egg seemed to be pecked. Closer examination proved, however, that some rounded object, probably one of the cinders upon which the egg was lying, had crushed a depression into the shell. The mutilation was about 4 mm. in diameter and only deep enough to break slightly through the membranous shell lining.

A second visit was made to the nest late in the afternoon of this same day. Upon this occasion the nighthawk left her nest in her customary manner and with only a slight display of the behavior which she had shown in the morning. I spent a longer time than usual at the nest checking the measurement of the eggs and weighing them. During the weighing process my attention was attracted by a slight "clucking" sound. The bird had approached to within four feet and there she lay observing my every movement with impatient curiosity punctuated, now and then, by a throaty "cluck" voiced with an upward inflection which seemed to interrogate my intent rather than to indicate distrust or fear.

The perfect egg measured 28.2 mm. in length by 21.8 mm. at its maximum width and weighed 6.77 grams. The egg with the crushed shell measured 29.2 mm. by 22.1 mm. but weighed only 5.32 grams. The reason for this reduced weight was determined a few days later.

Visits on July 3 and 4 brought out no new behavior except for the fact that I was able to approach to within a yard of the nest on both occasions before the bird flew off. Her flight took her not more than six feet away and her open-mouthed hissing was of short duration.

I very much regret that conditions beyond my control prevented a visit to the nest on July 5, for that is the probable date on which the perfect egg hatched. Anyhow, on July 6 I approached the nest in my usual manner and the nighthawk remained in her brooding position even as I advanced my hand cautiously and touched her. Then she sprang from the nest and alighted on a cement block less than a yard from my shoulder. There she faced me, hissing repeatedly with wide-open mouth and for the first time during my acquaintance with her the bird's attitude became menacing. This behavior subsided after a few seconds and she became quiet.

Then I noticed that of the two objects in the nest one was still an egg with a portion of its shell crushed, but the other was the downiest little speckled powder-puff of a chick one could ever imagine. The little bird was so generously covered with down that its tiny bill was scarcely visible and its eyes even less so. Irregularly spotted with gray which

ranged from light to dark slate and to brownish on dirty white, the youngster was even more invisible against the background of the cinder surface than was the almost indistinguishable egg beside which it lay.

As I cautiously handled the tiny chick it gave voice to several of the faintest of far off sounding "peeps." The first of these aroused the mother to a short series of hisses and a brief threatening advance to within arm's reach. Then she became calm and during the remainder of the several minutes I stayed at the nest she lay there on the cement block, wings folded naturally, eyes partly closed, a picture of supreme confidence. The little fellow, meantime, had shown surprising agility as he scrambled about for short distances over the rough surface of the roof.

Next day, July 7, my visit provided no noticeable variation in the adult bird's behavior nor any change in the nestling's condition. I took advantage of this visit to examine the damaged egg. Enlarging the depression in the shell I found a dead embryo which was more than half grown. Most of the liquids had dried away, thus diminishing the normal weight of the egg.

It was on the occasion of this visit of July 7 that I caught a glimpse of the possible mate of the nesting nighthawk. While the egg was being examined the cries of a second nighthawk attracted my attention skyward. Although I studied the flying bird as long as it remained visible, it was so far away that my unaided eyes were unable to detect the typical white tail band of the male. Neither the adult female on the roof beside me nor the youngster in the nest paid any attention to the bird in the air. I had, on two previous occasions, heard typical nighthawk cries from the direction of the thickly wooded park about one hundred yards away, but that bird had never before taken to the wing while I was visiting the nest.

I left Hartford on July 8 and it was August 9 before I was able to visit the roof again. On the latter date I found an adult nighthawk resting about twenty feet from the site of the deserted nest. As I approached cautiously this bird lay with eyes almost closed, but it was distinctly alert and uneasy. When I was still twenty-five feet away, the bird sprang into the air and instantly disappeared downward over the nearby edge of the roof. I ran to the spot at once, but the bird was nowhere to be seen. A careful examination of the entire roof gave no trace of any other bird, adult or immature.

On August 21 a final visit was made. The roof was deserted.

In summary: The nighthawk which was observed nested on a flat, cinder-covered roof. Two eggs were laid. Both eggs were fertile, but one was damaged during the incubation period and did not hatch. The egg which hatched was brooded for not more than twenty-one, nor less than eighteen, days. This bird was surprisingly calm through-

out the time she was being studied, and became especially tame as her nesting progressed toward completion. I regret the fact that repeated unsuccessful attempts to secure film defeated my desire to make a photographic record of these observations.

99 Warrenton Avenue, Hartford, Connecticut.

SOME INTERESTING NEST HABITS OF THE EASTERN BLUEBIRD *(SIALIA SIALIS SIALIS)*

By T. E. MUSSELMAN, Sc. D.

My first purpose in erecting Bluebird boxes in quantity was purely one of conservation. As boxes increased, however, I began to appreciate the possibilities of wholesale banding of mothers and nestling birds. Whether I banded several hundred or a thousand young birds was merely a matter of the time involved in running eight routes; one forty miles, one fifty, one seventy, and the remainder of lesser lengths. (An additional route of seventy boxes will be added between Quincy, Illinois, and Edina, Missouri, in 1946.)

Never has a year passed that some new and interesting information has not been gleaned. One year it was the effect of cold and rainy weather on nestlings; another year it was cowbird parasitism; again there were irregular types of eggs; then a cold snap killed several thousand eggs, advancing the incubation period three weeks. The bluebirds were thus thrown into direct competition with House Wrens for nest sites with the resultant increase in egg destruction by piercing. Most interesting were the occasional incidents which showed the bluebird's confidence in man, the love of its nest box, and its determination in spite of adversity to bring forth its little family of birds.

Years ago I erected a box on a sturdy white oak fence post. Termites and rot eventually ruined most of the other posts, making replacement necessary. The owner renewed the fence with wire and iron but left the one post on which the bluebird box was nailed. Termites worked on. Eventually the wood crumbled about the upper box nails. A bluebird had already taken possession, and built her nest. When the box finally swung, it hung by the lower nail, the entrance being an inch from the bottom. The female returned, reconstructed a shallow nest between the entrance and the reversed top and had layed four eggs when I discovered the accident.

I removed nest and eggs; returned the box to its former upright position; wired it safely to the post; then replaced the nest and eggs eight inches down in the box. Within five minutes the parent returned, she complained a bit; inspected the box carefully; then took possession. She layed a fifth egg and eventually matured a brood of five.

Another farmer when rebuilding his fence, removed a box with five eggs, carried it twelve feet away and nailed it to a 4 x 4 post supporting an advertising signboard. The mother discovered her box and took possession although it was nailed higher than bluebirds normally build. Evidently three of the eggs were addled for she matured but two birds.

As I approach a box during nesting season, I use a little net on a five-foot pole which I place over the entrance hole. It prevents the escape of an occasional nervous mother. Generally the female is brooding patiently and after removal and banding, she can be returned to the eggs. About 20% will remain without flushing after the entrance obstruction is removed.

During but one year have cowbirds used my boxes. Often I run a route of one hundred and fifty boxes without finding a parasitic egg. However, in 1945 I found the largest number (7) when running the 268 boxes on the Meredosia Route. Occasionally inquisitive small boys have difficulty returning a top to a box. If it is not replaced, leaving the nest exposed from above, the cowbirds do not hesitate to enter. On several such occasions I have found three parasitic eggs in a single nest. Cowbirds seem to fear entering a box through a side entrance, however.

Never have I found a starling using one of my boxes although once I discovered an immature starling in a box with four baby Blues. Whether a mother starling layed an egg then deserted the nest, or because of necessity she entered the box and laid her egg with those of the bluebird, I shall never know. When I discovered the mixed family, four skinny, dirty little bluebirds were huddled in the grass nest below, and the well fed foster brother was sitting on them, grabbing the major part of the food as it was brought in by the foster parents. He was clean, they were covered with offal and scaly dust.

I removed the offender, killed him, then washed each baby bluebird in a neighboring creek. After cleaning the box, I rebuilt the nest with dry bluegrass, and returned the babies. A week later, I found them clean, healthy, and about ready to fly.

In 1944 after three days of drenching rain, I discovered a box with a dead baby, two wiggling birds badly in need of food and warmth, and a fourth baby too young to desert the nest (probably ten days of age) had actually crawled from the box and had dropped to the ground. The interior of the box was a stinking quagmire. Some rain had driven in, and could not escape as the drainage hole in the bottom was filled with dirt. The parents were in great distress. They complained, dipped and snapped their bills at me as I approached.

Again I removed the birds, disposed of the dead one; rebuilt the nest with dry grass; returned the two cold babies; and captured the third little bird which had fluttered into the tall wet grass. So great was

the mother's distress that she entered the box without any apparent notice of the readjustment. Feeding and brooding soon restored the three babies to their normal condition.

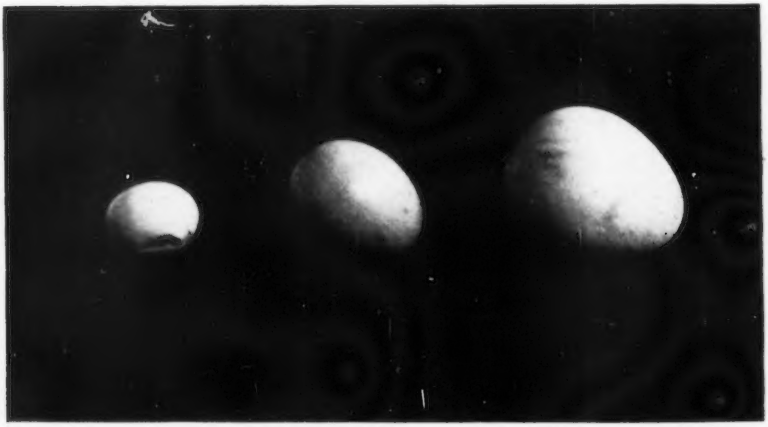
Although I have rebuilt nests, changed egg complements, and adjusted boxes, I have yet to experience a desertion on the part of a bluebird mother.

After the April freeze in 1940, many strange nest adjustments were noticed. Hundreds of frozen complements were deserted. New parents eventually took possession of the boxes. Often they built a flimsy grass nest through which the other eggs could be seen. Therein they laid their eggs directly above the old complements.

In one such nest, six eggs were covered by a well built nest. Two females deposited a total of nine eggs. The shape of the eggs suggested one had laid five and the other four. One eventually deserted. At any rate I took four eggs and redistributed them in other nests that had small complements without apparently inconveniencing the foster mothers or causing them to desert.

At Quincy the bluebirds normally lay four, five or six eggs during the first complement; and three, four, or five eggs during the second. During 1945, I found what I considered the only seven egg set I have ever seen during the twelve or more years I have interested myself in these birds.

Normally albinistic eggs number from three to five per cent. In



Variation in Bluebird Eggs
Left to right: Peewee Egg, Normal Egg, Jumbo Egg.

1942 we had a year of egg abnormalities. My Hamilton route had an eleven per cent yield of albinistic eggs during the first nesting with a normal yield during the second.

Seldom do mothers rebuild in my boxes. I sometimes find them nesting in boxes on other routes fifteen or twenty miles away. That year I found three peewee eggs as shown in the enclosed photograph and one jumbo egg. In no other year has a similar phenomenon occurred. The peewee eggs had no yolks. The amount of yellow blown from the jumbo egg suggested a double yolk.

The normal bluebird nest is a simple creation composed largely of dry bluegrass with the inclusion of an occasional horse hair on chicken feather. In 1945 a bluebird which built in box 36 on the Hamilton route, reverted to the thrush characteristic of using mud to hold other materials together. The basic structure was of grass but the upper edges were plastered to the box with a thin layer of mud and the corners were rounded with mud until the nest was similar to that of its red-breasted cousin, the robin. This banded female later travelled to box 34 about one-half mile south on the same route, and constructed a second nest similar in every detail to that which she formerly had built in box 36. She took off a normal five bird family.

If there is as much variation in the habits of other birds as many of us have discovered since we started the intensive study of bluebirds, certainly there is a world of opportunity for bird banders and nature students to do interesting and valuable scientific research in the field of life histories of other North American birds.

Quincy, Illinois.

RETURNS OF BANDED BIRDS: SOME RECENT RECORDS OF INTEREST

By MAY THACHER COOKE

The selection of interesting records for publication has become very much a problem of rejection, so many interesting records are being received.

As in previous papers of this series, an asterisk before the number indicates that it was known to be a bird of the year when banded.

LEACH'S PETREL *(Oceanodroma leucorhoa)*

36-144455, banded at Kent Island, N. B., July 17, 1938, by D. R. Griffin, was taken from its nesting burrow at the same place on July 17, 1944, by Dr. A. O. Gross.

37-138132, banded at Kent Island, N. B., July 21, 1937, by N. Pillsbury and W. Valencourt, was taken from its nesting burrow June 17, 1944.

WHITE PELICAN *(Pelecanus erythrorhynchos)*

*34-705521, banded July 21, 1937, at Kandahar, Sask., by F. G. Bard, went

through the windshield of a car and was instantly killed on September 29, 1944, at Ypsilanti, N. Dak.

DOUBLE-CRESTED CORMORANT *(Phalacrocorax auritus)*

*661592, banded July 27, 1934, at Lake Is., Saguenay Co., Que., by Dr. Harrison F. Lewis, was found exhausted at Daytona Beach, Florida, on February 28, 1944, by R. J. Longstreet.

*A711312, banded at Waubay Lake, S. Dak., June 29, 1934, by A. R. Lundquist, was found dead, probably at Webster, S. Dak., on October 2, 1944.

LOUISIANA HERON *(Hydranassa tricolor ruficollis)*

*39-670541, banded at Cape Romain National Wildlife Refuge, McClellanville, S. C., by A. H. DuPre, October 23, 1939, was killed at Pinogana, Darien, Panama, November 25, 1939. This is an air-line distance of about 1800 miles.

BLACK-CROWNED NIGHT HERON *(Nycticorax nycticorax hoactli)*

*A702343, banded June 30, 1929, at East Springfield, Mass., by Harry E. Woods, was "picked up" near Springfield, Mass., about May 1, 1944.

*38-726792, banded at Unionville, Mich., June 27, 1941, by Irvin Sturgis, was found injured at Yaguajay, Santa Clara Province, Cuba, on January 1, 1945.

CANADA GOOSE *(Branta canadensis)*

36-806614, banded April 22, 1936, at Merrymeeting Bay, Maine, by B. E. Smith, was shot at Ocracoke Is., near Hatteras Inlet, N. C., December 24, 1943.

WHITE-FRONTED GOOSE *(Anser albifrons)*

37-722602, banded at Loon Channel, Mackenzie Delta, Mackenzie, July 14, 1940, by C. E. Gillham, was shot in Brown County, S. Dak., October 23, 1943.

MALLARD *(Anas platyrhynchos)*

36-734367, banded at Lower Souris National Wildlife Refuge, Upham, N. Dak., September 17, 1939, by C. J. Henry, was trapped and released at White River National Wildlife Refuge, St. Charles, Ark., on December 13, 1940, by H. A. Miller. This bird was shot at DeWitt, Ark., on November 30, 1942.

36-734467, banded at Lower Souris National Wildlife Refuge, Upham, N. Dak., September 23, 1939, by C. J. Henry, was trapped and released at Chautauqua National Wildlife Refuge, Havana, Ill., October 30, 1942, by Dr. J. B. Low. On December 2, 1942, it was shot at DeWitt, Ark.

34-642146, banded at Pitt River, B. C., March 4, 1935, by A. L. Hagar, was shot on the Ruth River, near Dutch Harbor, Alaska, in January, 1944.

BLACK DUCK *(Anas rubripes)*

B654067, banded at Battle Creek, Mich., September 8, 1933, by Miles D. Pirnie, was retrapped at the same station November 23, 1938, at which time band 39-707706 was applied. This bird was shot about 10 miles southwest of Kalamazoo, Mich., on October 4, 1943.

38-710496, banded at Lake Mattamuskeet National Wildlife Refuge, New Holland, N. C., April 4, 1938, by H. C. Lawrence, was shot about 30 miles east of Fort Chimo Post, Que., on July 15, 1943.

40-606781, banded at Brookgreen Gardens, Georgetown, S. C., November 3, 1941, by P. L. Hovey, was shot at Cape Henrietta Maria, on the west coast of James Bay, Ont., in July, 1944.

41-633804, banded at Long Pond, Brewster, Mass., March 22, 1941, by J. J. Storrow, was shot at Hoope Pole Cove, Lewis Bay, Labrador, about October 1, 1944.

PINTAIL *(Anas acuta tzitzihoa)*

A691743, banded at Lake Merritt, Calif., January 16, 1931, by E. W. Ehmann, was retrapped at the same station on September 30, 1943.

A692487, banded at Lake Merritt, Calif., January 20, 1931, by E. W. Ehmann, was retrapped at the same station on November 16, 1939 (when it was re-banded 40-600860) and again on September 30, 1943.

37-634548, banded at Blackwater National Wildlife Refuge, Cambridge, Md., February 15, 1941, by David V. Black, was shot at Cordelia, Calif., November 17, 1943.

38-625237, banded at Upper Souris National Wildlife Refuge, Foxholm, N. Dak., August 17, 1941, by F. S. Dart, was shot at Nalok, Mackenzie, in September, 1942.

38-693359, banded at Sacramento National Wildlife Refuge, Willows, Calif., September 26, 1938, by P. J. Van Huizen, was caught in a muskrat trap 70 miles northwest of Old Crow, Yukon Territory, on June 27, 1944.

41-621551, treated for botulism and released at Tulare Lake, Kings Co., Calif., on October 10, 1940, by G. H. True, Jr., was shot at Havana, Ill., December 2, 1940.

41-665022, treated for botulism and released at Tulare Lake, Calif., September 5, 1941, by G. H. True, Jr., was shot at Teloo Lake, Yukon Territory, in June, 1943.

SWAINSON'S HAWK *(Buteo swainsoni)*

36-607614, banded at Stockton, Kansas, September 29, 1936, by R. H. Imler, was shot on Milk River, 10 miles west of Havre, Montana, May 4, 1944.

BALD EAGLE *(Haliaeetus leucocephalus)*

*41-807467, banded in the nest at Englewood, Fla., February 16, 1943, by C. L. Broley, was shot at Mendota, Ill., about August 30, 1943.

*41-807486, banded in the nest at St. Petersburg, Fla., February 23, 1943, by C. L. Broley, was shot about 10 miles north of Chipman, Queens Co., N. B., on August 20, 1944.

*41-807498, banded in the nest at St. Petersburg, Fla., March 5, 1943, by C. L. Broley, was shot at West Jeddore, Halifax Co., N. S., on October 18, 1943.

PRAIRIE FALCON *(Falco mexicanus)*

*36-714986, banded at Rockport, Weld Co., Colo., June 23, 1943, by R. B. Williams, was killed at Masefield, Sask., August 13, 1943.

*41-641137, banded at Rockport, Weld Co., Colo., June 23, 1943, by R. B. Williams, was shot at Spring Valley, Sask., August 27, 1943.

*39-645645, banded south of Flat Creek, Wyoming, June 26, 1939, by O. J. Murie, was "found" near Byers, Texas, about January 15, 1943.

DUCK HAWK *(Falco peregrinus anatum)*

*38-620213, banded at Port Washington, Wis., October 9, 1938, by W. S. Feeney, was shot at sea, 18 miles east-southeast of Sabine, Texas, October 30, 1938.

*39-701762, banded at Madison, Wis., October 19, 1940, by W. S. Feeney, was taken at Pinar del Rio, Cuba, March 3, 1941.

*39-721057, banded at Nyack, N. Y., June 11, 1939, by W. R. Spofford, died from eating poisoned pigeons in Jersey City, N. J., January 25, 1944.

GAMBEL'S QUAIL *(Lophortyx gambelii)*

36-412088, banded at Phoenix, Ariz., October 12, 1936, by Carlos Stannard, returned to the same station on April 25, 1938, September 3, 1939, August 21, 1941, May 8, 1942, and November 24, 1942.

CLAPPER RAIL *(Rallus longirostris)*

42-512824, banded at Gargathy Inlet, Va., August 8, 1944, by Herbert Buckalew, was shot in Duval County, Fla., October 16, 1944.

COOT *(Fulica americana)*

36-618634, banded at Lake Merritt, Oakland, Calif., November 13, 1935, by E. W. Ehmann, was caught in a muskrat trap at Tule Lake, Calif., February 27, 1943.

39-673104, banded at Des Lacs National Wildlife Refuge, Kenmare, N. Dak., September 28, 1939, by S. H. Low, was shot 8 miles southwest of Lodi, Calif., November 14, 1943.

PIPING PLOVER *(Charadrius melodus)*

*38-135175, banded as a young male at Moriches Bay, L. I., N. Y., June 5, 1938, by LeRoy Wilcox, was trapped on the nest and rebanded (42-151603) on May 15, 1943, at the same locality.

WOODCOCK *(Philohela minor)*

37-340925, banded at Lottie, La., January 12, 1939, by L. J. Merovka, was shot in Osceola Co., Mich., about October 27, 1944.

LEAST SANDPIPER *(Erolia minutilla)*

Five individuals banded in the fall of 1939 by Irl Rogers at Modesto, Calif., were retrapped by him during the fall of 1943.

AVOCET *(Recurvirostra americana)*

*37-415294, banded at Crescent Lake National Wildlife Refuge, Ellsworth, Nebr., June 15, 1938, by R. H. Imler, was found sick and died near Mt. Trumbull, north of Grand Canyon in Mohave Co., Ariz., on September 14, 1943.

HERRING GULL *(Larus argentatus)*

*B610184, banded at Duck Island, Isles of Shoals, N. H., July 10, 1931, by James P. Melzer, was found wounded (later died) on Nantucket Island, Mass., July 18, 1943.

*B619558, banded at Jack Island, Green Bay, Wis., July 2, 1931, by H. A. Anderson, was picked up alive (and released) at Evanston, Ill., September 1, 1944.

*35-542810, banded on the Little Sister Islands, Green Bay, Wis., June 25, 1935, by Harold C. Wilson, was reported from Duluth, Minn., December 5, 1943. To quote from the recovery letter: "It is likely that the bird expects to stay its fourth consecutive winter in Duluth; it stayed the whole last winter, and I have seen the same bird at least part of two previous winters. It is easy to get its number, when it comes to perch upon a man's outstretched arm to get something to eat . . . calls almost daily at noon time in Duluth Iron & Metal Co.'s scrap iron yard in Duluth."

CALIFORNIA GULL *(Larus californicus)*

A557244, banded at Clear Lake, Modoc Co., Calif., January 30, 1933, by H. M. Worcester, was "found" at Waldo Lake, Lane Co., Oregon, August 16, 1944.

LAUGHING GULL *(Larus atricilla)*

*40-510176, banded at Cobb Is., Va., July 29, 1940, by Herbert Buckalew, was found with a broken wing at Far Fan Beach, Ancon, Panama Canal Zone, June 15, 1941.

*41-507234, banded at Cobb Is., Va., July 28, 1941, by Herbert Buckalew, was captured by a fisherman at San Jose de Guatemala, Guatemala, Central America, January 28, 1942.

*41-508229, banded at Cobb Is., Va., July 22, 1942, by Herbert Buckalew, was "found" at Pizarro, Chocò, Colombia, probably in February, 1943.
*42-511632, banded at Cobb Is., Va., July 22, 1943, by Herbert Buckalew, was found dead (probably killed by hurricane) at Matunuck Beach, Rhode Island, September 16, 1944.

COMMON TERN *(Sterna hirundo)*

*403481, banded at Tern Is., Chatham, Mass., July 12, 1926, by C. B. Floyd, was trapped at the same place (and rebanded 39-335324) on June 7, 1940, by O. L. Austin. It was trapped again by Austin on June 9, 1944.
*434299, banded at Tern Is., Chatham, Mass., July 7, 1926, by C. B. Floyd, was trapped (and rebanded 36-335199) at the same place by O. L. Austin, June 12, 1937. It was trapped again at Tern Is., June 9, 1944, by O. L. Austin.
*B315488, banded at Tern Is., Chatham, Mass., June 23, 1931, by O. L. Austin, was retrapped at the same place on June 13, 1939 (when it was rebanded 38-330047) and again on July 26, 1944.
*B323153, banded at Plymouth, Mass., July 4, 1931, by C. L. Hauthaway, was trapped at the same place (and rebanded 40-326470) on June 12, 1941, by O. L. Austin. On June 27, 1943, it was retrapped at Tern Island, Chatham, Mass., by O. L. Austin.
*36-351944, banded at Ah-Gwah-Ching, Minn., July 10, 1940, by H. A. Burns, was found exhausted at Boyacá, Cantón Chone, Manabí, Ecuador, April 30, 1941.
*41-351327, banded at Brant Beach, N. J., July 26, 1941, by W. E. Batezel, was killed by a stone at Port-au-Prince, Haiti, September 29, 1941.

ROSEATE TERN *(Sterna dougallii)*

*40-333037, banded at Ram Is., Mattapoisett, Mass., July 2, 1941, by O. L. Austin, was found exhausted (and died) on a houseboat near Las Piedras, Paraguana. Venezuela, September 22, 1943.
*42-314027, banded at Bird Is., Marion, Mass., July 2, 1943, by O. L. Austin, was recovered during the following winter near Areia Branca, Rio Grande do Norte, about 100 miles northeast of Natal, Brazil.

CASPIAN TERN *(Hydroprogne caspia)*

*B608823, banded at Shoe Is., Beaver Islands, Mich., July 18, 1931, by W. I. Lyon, was found dead at Seul Choix Point, near Manistique, Mich., July 30, 1941.
*35-534152, banded at Gravelly Isle, Delta Co., Mich., June 25, 1935, by W. I. Lyon, was found alive (but soon died) at Lamoille Lake, Morrisville, Vt., October 10, 1944.

BLACK SKIMMER *(Rynchops nigra)*

*38-424267, banded at Smith Is., Va., July 24, 1938, by H. L. Bowen, was killed by a hurricane at Virginia Beach, Va., September 14, 1944.

MOURNING DOVE *(Zenaidura macroura)*

*A452590, banded at North Eastham, Cape Cod, Mass., August 2, 1934, by O. L. Austin, was trapped at the same station on July 21, 1943.
*34-407585, banded at Higginsville, Mo., June 2, 1938, by Irvin Sturgis, was shot about December 7, 1940, at Quezaltenango, Guatemala.
40-346464, banded at Curtain Springs, 8 miles west of Kingman, Arizona, July 15, 1941, by J. A. Neff, was shot in Presidio Co., Texas, September 1, 1943.
41-404805, banded at North Eastham, Cape Cod, Mass., July 23, 1943, by O. L. Austin, was shot at Harmony, Maryland, September 22, 1943.

WHITE-WINGED DOVE *(Zenaida asiatica)*

*34-412837, banded at Komatke, Arizona, June 23, 1943, by J. A. Neff, was shot at Areilia, Guerrero, Mexico, about January 10, 1944.

*41-400804, banded at New York Thicket, 30 miles south of Phoenix, Arizona, July 9, 1941, by J. A. Neff, was "found" at Colima, Colima, Mexico, December 10, 1944.

40-409540, banded at Phoenix, Arizona, August 24, 1940, by Carlos Stannard, was retrapped at the same station on May 31, 1944; this bird was adult when banded.

INCA DOVE *(Scardafella inca)*

39-208321, banded at Phoenix, Arizona, December 25, 1938, by Carlos Stannard, was retrapped at the same station on May 7, 1939, March 28, 1940, November 10, 1940, April 21, 1941, February 8, 1942, July 11, 1942, and April 11, 1943.

BARN OWL *(Tyto alba pratincola)*

C612970, banded near Leipsic, Delaware, January 13, 1938, by Herbert Buckalew, was "found" 5 miles from Dover, Delaware, about October 27, 1944.

*41-619767, banded at Leetonia, Ohio, June 18, 1944, by P. A. Stewart, was shot 5 miles west of High Point, N. C., October 17, 1944.

LONG-EARED OWL *(Asio otus wilsonianus)*

*38-687566, banded at Madison, Wis., May 15, 1939, as a juvenile, by W. S. Feeney, was found dead near Weinert, Texas, December 5, 1943.

CHIMNEY SWIFT *(Chaetura pelagica)*

F122388, banded at Quincy, Ill., September 10, 1933, was "found" by T. E. Musselman at the same place on June 15, 1944.

36-1995, banded at Memphis, Tenn., October 5, 1935, by B. B. Coffey, Jr., was killed by a cat at Batesville, Ark., in July, 1944.

37-27043, banded at Atlanta, Ga., October 11, 1936, by Harold S. Peters, was found stunned at Newberry, S. C., August 27, 1944.

39-33866, banded at Nashville, Tenn., September 23, 1938, by Mrs. F. C. Laskey, was found in a stable at Rivington, Quebec, about August 22, 1944.

139-44140, banded at Blind River, Ont., July 24, 1940, by Irvin Sturgis, was trapped and released at Knoxville, Tenn., on September 4, 1941, September 20, 1942, and again on September 16, 1944, by Henry Meyer.

41-30323, banded at Macon, Ga., October 22, 1940, by R. J. Fleetwood, "died of injuries from falling down a chimney" at Unionville, Mo., about August 16, 1944.

42-116133, banded at Macon, Ga., September 29, 1942, by R. J. Fleetwood, was "caught" at Perth, New Brunswick, May 24, 1944.

FLICKER *(Colaptes auratus)*

40-341602, banded at Barrington, Ill., June 28, 1944, by C. W. Kossack, was recovered at Nauvoo, Ala., October 25, 1944.

KINGBIRD *(Tyrannus tyrannus)*

35-138355, banded at Wilton, N. Dak., July 10, 1936, as an adult bird, by Mrs. Hannah R. Gray, was retaken in the same trap on May 24, 1942.

PHOEBE *(Sayornis phoebe)*

*38-162787, banded at Wells River, Vt., June 16, 1938, by W. P. Smith, was shot November 3, 1938, at Grayson, Louisiana.

TREE SWALLOW *(Iridoprocne bicolor)*

34-72143, banded at Princeton, Mass., June 8, 1935, by L. B. Chapman, was retrapped in a nest box at the same place on June 3, 1943, the eighth return. It did not return in 1944.

BARN SWALLOW *(Hirundo rustica erythrogaster)*

36-49188, banded at Groton, Mass., June 16, 1936, by W. P. Wharton, was retrapped at the same station on June 19, 1943.

36-68892, banded at Lower Souris National Wildlife Refuge, June 4, 1943, by D. R. Ambrosen, was caught in a barn at Antler, Sask., about June 15, 1943.

BLUE JAY *(Cyanocitta cristata)*

355948, banded at Cohasset, Mass., October 10, 1932, by Mr. and Mrs. R. B. Harding, was retrapped at the same station on November 7, 1943.

414580, banded at Lakewood, Ohio, September 9, 1930, by E. C. Hoffman, fell to the ground and died on January 9, 1941, at the same place.

415002, banded at Lakewood, Ohio, October 20, 1935, by E. C. Hoffman, was found dead in the same town on October 7, 1944.

*713895, banded at Madison, Wis., in July, 1929, by Wayne Dancer, was found dead on October 16, 1938, at the same place.

A245935, banded at Worcester, Mass., June 17, 1930, by L. S. Jenkins, was found in dying condition on May 19, 1939, very near the banding station.

B233217, banded at Hillsdale, Mich., April 4, 1934, by B. H. Barber, was found dead about October 8, 1943, at the same place.

B339241, banded at Auburndale, Mass., August 17, 1932, by C. B. Floyd, flew into a wire at West Newton, Mass., March 17, 1941.

42-207170, banded at Orlando, Fla., August 12, 1942, by S. B. Fickett, Jr., was found dead at Rockville Centre, N. Y., in December, 1943.

CALIFORNIA JAY *(Aphelocoma coerulescens)*

37-309209, banded at Pomona, Calif., April 14, 1937, by Mrs. N. Edward Ayer, was retrapped at the same station on April 17, 1944.

WHITE-BREASTED NUTHATCH *(Sitta carolinensis)*

H77448, banded at Plainfield, N. J., November 18, 1934, by DeWitt P. Brokaw, was retrapped April 19, 1944. "This bird has returned to station many times; visits feeding station daily; band worn very thin but still legible."

WREN-TIT *(Chamaea fasciata)*

37-7517, banded at Eagle Rock, Calif., September 2, 1938, by W. G. Webb, was found dead at Los Angeles, Calif., August 3, 1944.

CATBIRD *(Dumetella carolinensis)*

35-138262, banded at Huntington, L. I., N. Y., July 10, 1936, as an adult, by Geoffrey Gill, was retrapped July 12, 1943, and May 10, 1944, and was found dead ⅛ mile from the banding station on July 2, 1944. This completes the record of this bird (see Bird-Banding v. 16, p. 18).

*38-186054, banded at Huntington, L. I., N. Y., August 3, 1938, by Geoffrey Gill, has returned to the banding station on the following dates: May 25, 1939; July 22, 1940; May 10, 1941; May 6, 1942; July 12, 1943, and May 10, 1944.

BROWN THRASHER *(Toxostoma rufum)*

36-322811, banded as an adult at Lansing, Mich., May 5, 1937, by C. C. Ludwig, was retrapped at the same station on May 3, 1940, April 25, 1943, and May 7, 1944.

37-308978, banded as an adult at North Little Rock, Ark., April 5, 1937, by Mrs. Rowland Thomas, was retrapped at the same place on March 26, 1944.

OLIVE-BACKED THRUSH *(Hylocichla ustulata)*

139-9259, banded 4 miles south of Canton, Ohio, September 23, 1939, by H. Braun, was "captured" at Cumming, 40 miles north of Atlanta, Ga., on November 8, 1943.

PROTHONOTARY WARBLER *(Protonotaria citrea)*

139-96601, banded in Convis Twp., Calhoun Co., Mich., June 18, 1939, by L. H. Walkinshaw, was recognized by colored bands on May 15, 1942, at the same locality.

YELLOW-THROAT *(Geothlypis trichas)*

38-30320, banded as an adult at Nashville, Tenn., September 7, 1938, by Mrs. F. C. Laskey, was retrapped at the same station on June 30, 1944; it had also been taken in 1940 and 1941.

WESTERN MEADOWLARK *(Sturnella neglecta)*

*36-319833, banded at Rabbit Lake, Sask., June 8, 1938, by Homer Myers, was shot at Choctaw, Okla., February 21, 1939.

YELLOW-HEADED BLACKBIRD *(Xanthocephalus xanthocephalus)*

37-349001, banded at Des Lacs National Wildlife Refuge, Kenmare, N. Dak., July 31, 1938, by S. H. Low, was drowned in a water tank at Big Springs, Nebr., August 7, 1943.

RUSTY BLACKBIRD *(Euphagus carolinus)*

42-151880, banded at Lumberton, N. C., February 18, 1943, by J. L. Stephens, was caught in a muskrat trap and drowned on the Cranberry River in Dalton Twp., Victoria Co., Ont., April 24, 1944.

COWBIRD *(Molothrus ater)*

39-147244, banded at DeWitt, Ark., January 22, 1940, by C. M. Owens, was "caught" at Lindale, Texas, February 10, 1944.

39-246705, banded at Dublin, N. H., April 4, 1940, by A. R. Tobey, was shot at Conway, S. C., February 2, 1944.

RED-EYED COWBIRD *(Tangavius aeneus)*

138-106902, banded as an adult male at Brownsville, Texas, July 5, 1943, by Dr. G. B. Saunders, was retrapped at the banding station on May 22, 1944, and shot by a boy two blocks away on June 15, 1944.

CARDINAL *(Richmondena cardinalis)*

34-206913, banded as an adult female at Cranbrook, Bloomfield Hills, Mich., April 17, 1934, by Walter P. Nickell, was retrapped at the same station on December 14, 1944.

35-214111, banded at Cape Girardeau, Mo., February 6, 1936, by Homer R. Bolen, was caught by hand in a garage by the cooperator on January 20, 1943, and rebanded 40-238075.

EVENING GROSBEAK *(Hesperiphona vespertina)*

35-109409, banded at Ottawa, Ont., May 7, 1939, by Ralph E. DeLury, was trapped and released at Sault Ste. Marie, Mich., on May 13, 1944, by M. J. Magee.

35-135859, banded at Barre, Vt., April 14, 1936, by Mrs. Howard A. Drew, was retrapped at the same station on December 30, 1941, and recognized by colored bands on November 26, 1943.

37-224845, banded at Sault Ste. Marie, Mich., May 1, 1937, by M. J. Magee, was trapped and released at Barre, Vt., February 23, 1942, by Mrs. Howard A. Drew.

39-247539, banded at Presque Isle, Maine, February 22, 1942, by Glen D. Chamberlain, was trapped and released at Sault Ste. Marie, Mich., May 10, 1942, by M. J. Magee.

39-247555, banded at Presque Isle, Maine, by Mr. Chamberlain on the same day as the above bird, was trapped by Mr. Magee on May 9, 1942.

39-247567, banded at Presque Isle, Maine, by Mr. Chamberlain on the same day as the above two, was trapped and released at Lexington, Mass., April 22, 1944, by Mrs. Ada C. Govan.

40-219775, banded at Waterville, Maine, April 8, 1940, by H. Wesley Perkins, was trapped and released at Lexington, Mass., by Mrs. Govan, on January 28, 1944, and again on May 1, 1944.

42-225212 and 42-225157, banded on February 17, 1944, and April 29, 1944, respectively, at Lexington, Mass., by Mrs. Ada C. Govan, were caught in August, 1944, at Brennan Lake, near Kippewa,, Quebec, by a man who had noticed the bands on these "strange birds" which he had seen there during the summers of 1943 and 1944.

ABERT'S TOWHEE *(Pipilo aberti)*

37-217710, banded as an adult at Phoenix, Arizona, February 19, 1937, by Carlos Stannard, was retrapped at the same station on November 11, 1938, January 13, 1941, and January 27, 1943.

39-235265, banded at Phoenix, Arizona, as an adult bird on August 7, 1939, by Carlos Stannard, was retrapped at the same station on December 6, 1943.

TREE SPARROW *(Spizella arborea)*

34-28432, banded at Grand Rapids, Mich., February 7, 1936, by Mrs. Margaret T. DuMond, returned for the sixth time on February 12, 1944.

138-19853, banded at Barre, Vt., January 5, 1939, by Mrs. Howard A. Drew, was retrapped on January 10, 1941, January 7, 1942, December 5, 1942, and November 16, 1943.

138-107711, banded at Stow, Ohio, February 18, 1939, by Miss Alta Smith, was retrapped at the same station on April 18, 1944, by Mr. and Mrs. C. P. Mountz.

SONG SPARROW *(Melospiza melodia)*

38-134557, banded at Williamstown, Mass., April 11, 1938, by Mrs. Gertrude R. Doughty, returned in 1939, 1940, 1941, 1942, 1943, and again on March 30, 1944.

42-151022, banded at Willowdale, Ont., October 17, 1942, by R. F. James, was "caught" near Godwin, N. C., December 16, 1943.

42-164549, banded at Sewell, N. J., March 24, 1943, by W. R. Batezel, was found dead (probably hit by a car) near Warren, Conn., about August 15, 1944.

U. S. Fish and Wildlife Service, Washington, D. C.

BLOOD PARASITES OF THE MAGPIE AND ENGLISH SPARROW OF EASTERN WASHINGTON[1]

BY EDWARD D. WAGNER

Extensive studies on the blood parasites of birds have been carried out in many parts of North America, especially in the eastern areas of the United States. Since there has been little, if any, work of this nature reported from the Pacific Northwest, it seems worth while to find out: (1) what blood parasites are present in the magpie and English Sparrow in eastern Washington, (2) the incidence of parasitism, and (3) whether these findings differ from those reported from other localities.

The eighty-two specimens, 57 magpies *(Pica pica hudsonia)* and 25 English Sparrows *(Passer domesticus)* were collected in Whitman County at or near Pullman, Washington from April, 1944, through May of 1945. Blood smears stained with Wright's blood stain were made from all birds and in several cases Harris' Hematoxylin-Eosin and Heidenhain's Iron-Hematoxylin were also employed.

Haemoproteus picae, Leucocytozoon berestneffi Sambon, *Trypanosoma avium* Danilewsky, and microfilaria were found in the magpies while microfilaria was the only parasite found in the English Sparrow. See Table I for incidence. With the following exceptions the findings of this investigation agree in general with those reported from other localities: in the magpie, Trypanosoma infections have not been reported previously. Plasmodia, found in magpies by Coatney and Jellison (1940), were not observed in the 57 specimens examined in this study. In general the percentage of blood parasite infection of magpies is higher in this investigation than reported by others.

Plasmodia, Haemoproteus, Toxoplasma, Trypanosoma and microfilaria (Herman, 1944) have been reported from the English Sparrow, but microfilaria was the only parasite found in the 25 birds examined. Some factors which may account for the low incidence of parasitism in English Sparrows are the small number of birds examined, the relative absence of malaria in the Pacific Northwest, light parasitism in general in this locality, and possibly the absence of proper transmitting agents.

Three types of microfilaria were found in magpies. The first measured from 75 to 135 micra in length and 4.5 to 6 in width. They were blunt anteriorly and tapered to a point posteriorly. Distinct cross striations were present. The second type was cross-striated, blunt at both ends and were from 170 to 200 micra long and about 6 micra wide. Only one specimen of the third form was found. Cross-striations

[1] Submitted in partial fulfillment of the requirement for the degree of Master of Science in Zoology at the State College of Washington.

were not visible and it measured 38 micra in length by 3 micra in width. The microfilaria found in English Sparrows were cross-striated and measured about 50 micra in length by 5 micra in width.

TABLE I. INCIDENCE OF BLOOD PARASITES

Bird	Age	No. examined	No. infected	Per cent infected	Parasites							
					Haemoproteus		Leucocytozoon		Trypanosoma		Microfilaria	
					No. infected	Per cent	No. infected	Per cent	No. infected	Per cent	No. infected	Per cent
Magpie	Adult	22	21	95	15	68	8	36	6	27	17	77
	Immature	5	4	80	4	80	0	0	0	0	0	0
	Fledgling	30	23	77	22	73	8	27	0	0	0	0
Total		57	48	84	41	72	16	28	6	10	17	30
English Sparrow	Adult	24	2	8	0	0	0	0	0	0	2	8
	Fledgling	1	0	0	0	0	0	0	0	0	0	0
Total		25	2	8	0	0	0	0	0	0	2	8

The finding of *Trypanosoma avium* in magpies constitutes a new host record. It is the opinion of Roudabush (personal communication) that the *Trypanosoma* belong to the species *avium*, both myonemed and non-myonemed forms being represented.

In conclusion, the author wishes to express his appreciation to Dr. R. L. Roudabush of Ward's Natural Science Establishment, Inc., Rochester, N. Y., for checking the identification of the protozoan parasites and identifying the *Trypanosoma;* and to Herbert L. Eastlick, Associate Professor of Zoology, of the State College of Washington, who directed the study.

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Atlantic Union College, South Lancaster, Massachusetts.

GENERAL NOTES

Bobwhites that Traveled.—The "Bobwhite is essentially sedentary" was the conclusion reached by H. L. Stoddard (The Bobwhite Quail, p. 182) after extensive banding of the species. Out of about 250 recoveries, which was a more than ten per cent return, only eleven individuals were taken as much as three miles from the place of banding, and the longest distance traveled was seven miles. A single recovery from farther away he considered out of the picture since it was apparently the result of a known destruction of habitat. We have no such information to guide us to a proper interpretation and evaluation of the following records of adventurous Bobwhites. In some cases the distance traveled by the bird may be somewhat less than that figured between post-offices from the map when there is no information as to whether the directions from the towns of banding and recovery places reduced the apparent distance.

623590, banded at Quincy, Illinois, January 25, 1930, by T. E. Musselman, was killed November 23, 1930, 5½ miles northeast of the banding place.

A451455, banded as an immature at Kansas, Illinois, August 19, 1933, by W. B. Taber, Jr., was killed November 11, 1933, 7 miles north of Martinsville, Illinois, about 7 miles from the place of banding.

620054, banded at Manorville, Long Island, New York, in July, 1931, by J. K. Jerome, was shot about November 20, 1932, at Westhampton Beach, about 10 miles away.

A442247, banded at Cushing, Minnesota, November 14, 1934, by M. F. Gunderson, was caught with a dip net and probably released July 17, 1935, at Motley, Minnesota, about 14 miles from where banded.

38-347814, banded as an immature on the White River National Wildlife Refuge, St. Charles, Arkansas, June 29, 1938, by Howard A. Miller, was shot December 24, 1938, near Tichnor, Arkansas, a reported distance of about 15½ miles.

A454670, banded September 8, 1933, in Ellis County, Oklahoma, 26 miles north and 2 miles west of Cheyenne, was killed about December 2, 1933, 8 miles north of Cheyenne, which would make the distance traveled about 17 miles.

506067, banded at Yemassee, South Carolina, early in March, 1927, by H. C. Morrison, was killed January 27, 1928, at Smoaks, South Carolina. These towns are about 28 miles apart.

A408428, banded as an immature, at Fairhope, Alabama, July 23, 1932, by Mrs. W. H. Edwards, was shot about February 16, 1933, at Atmore, Alabama, about 40 miles distant.

A429771, banded at Madison, Wisconsin, December 28, 1931, by George Wagner, was killed by a locomotive December 24, 1934, at Wauzeka, Wisconsin, more than 75 miles west.—MAY THACHER COOKE, U. S. Fish and Wildlife Service, Washington, D. C.

Eastern Kingbird Uses Rose Petals As Nest Material. In discussing the nest of the Eastern Kingbird (*Tyrannus tyrannus*) Eaton (1914), Forbush (1927), and Bent (1942) mention the use of rootlets, soft bark, fine grass, hair, wool, moss, plant-down, and catkins as lining materials. There seem to be no

observations on the use of flower parts such as rose petals in these nests. Such an observation, therefore, seemed worth recording.

On the morning of June 13, 1943, the writer was watching an Eastern Kingbird as it sat on a telephone wire a few feet away. Suddenly it dove viciously at one of the outer blossoms of a huge rosebush bearing large, white flowers. It returned to the wire with a prominent white object in its beak which was assumed to be a captured moth. This it dropped, and quickly plunged again at the white flowers, coming up with a larger beakful, and loosing a gleaming shower of petals. It flew some thirty yards to the top of an apple tree and there busied itself. Soon it returned to the wire above the bush, and the diving on the blossoms was repeated. This was again followed by a beak-filled rest on the wire and then a trip to the same tree.

Suspicions that the kingbird might be using these white petals as nest material prompted an investigation. In the upper branches of the apple tree there was found a nest which was lined with literally dozens of the petals. Many were white and absolutely fresh; others were in various stages of dying and becoming brown as they progressed outward. This indicated that the petal-gathering probably had been in progress several days prior to June 13.

Sixteen attacks on the blossoms, followed by trips to the tree, were observed during the course of the day. It was noted that two other rose bushes on various parts of the premises were likewise visited. One of these possessed pure white flowers, as did the first, while the petals of the third bore just the faintest traces of pink.

Adjacent to the bush of white roses which was most frequently visited there was one the flowers of which were a deep, rich pink. It is of interest that these highly colored blossoms were never touched by the petalophilous kingbird.

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Robert M. Stabler, Department of Zoölogy, University of Pennsylvania.

Unusual Matings of a Brown-headed Nuthatch.—On April 28, 1942, at the Piedmont National Wildlife Refuge, Jones County, Georgia, I found the nest of a Brown-headed Nuthatch, (*Sitta pusilla pusilla*, Latham) containing five eggs in a log nesting box which I had erected for bluebirds. On May 10, the female was captured while feeding the young and banded. Fifteen days later the male was caught in the same manner and also banded. For convenience I called the male M-42 and his mate F-42. Their five fledglings were banded on May 27 with bands 42-33536-42-33540 inclusive.

In the spring of 1943, a pair of these nuthatches nested in a box approximately 35 yards from the previous year's nesting site. When the male was caught on April 23, his band showed him to be M-42 and his mate was found to be the same one of the previous season. Thus this pair was mated for two consecutive seasons. The pair succeeded in raising four fledglings and they were banded on April 28 with bands 39-7611-39-7614 inclusive.

In the spring of 1944 a nest of this species was found in a nesting box approximately 400 yards from the two previous nesting sites. The male was caught while

feeding young on April 16 and by his band, proved to be M-42. However, he had abandoned his mate of the previous two seasons, his new mate when caught was found to wear band 39-7612 and was one of his own daughters of the 1943 brood. This mating was a success and six young were banded April 20 with bands 39-7673-39-7678 inclusive.

No further records were made of any individuals of the three family groups until December 14, 1944. At dusk on this evening I noticed a bird of this species apparently going to roost in a nesting box about 75 yards from the nesting sites of 1942 and 1943 mentioned above. I carefully closed the door on the box trapping the bird inside. Much to my surprise, instead of one bird being inside there were four. Of these four birds three of them wore bands. They were M-42 and his mate of 1942 and 1943, F-42 and 39-7677, either a son or daughter of M-42 by his 1944 wife. The unbanded bird was banded and all four were placed back in the box where they had presumably sought protection from the cold.

In the spring of 1945, a nest of this species was found in the same nesting box that the species used last year. I looked at the nest April 7, which was an unusually cold day for the season, and both parents were caught in the nesting box while brooding four newly hatched young and they proved to be M-42 and F-42, the third mating of these individuals in four years. When I went to band the nestlings a few days later, I found them gone, probably destroyed by some predatory animal.

Another observation was made of the nesting box May 6 and was found to contain another nest of the species with four eggs. May 18 I caught the parents while feeding the young and they proved to be M-42 and a new wife banded at my station February 8, 1945 with band 43-47541. The three nestlings were banded May 19 with bands 43-47556-43-47558 inclusive.

In conclusion, a banded male Brown-headed Nuthatch was found to be a parent of 27 young in four years. He mated with the same female for three years, two of them consecutive in a restricted area. In the third season he moved some distance away from this area and mated with his own daughter. The following winter the male was found roosting in a nesting box near the original nesting site with his original mate, an unbanded stranger and one of his own children of the 1944 mating. In the spring of 1945 the original pair was found nesting in the box used by the species last year. Upon the destruction of the four nestlings by some predatory animal, the male cast aside his original mate and mated with a female banded at my station last winter and successfully raised a brood of three.—Raymond J. Fleetwood, Fish and Wildlife Service, Round Oak, Georgia.

Trap Behavior of Bronzed Grackles.—In *Bird-Banding*, April, 1937, pp. 78 and 79, Mr. Geoffrey Gill reported on the trap behavior of Purple Grackles at his banding station at Huntington, Long Island, New York, which he judged to be very similar to those taken by Mr. Horace McCann at his station at Paoli, Pennsylvania, which McCann reported on in *Bird-Banding*, October, 1931. In this paper, I will give some notes on the trap behavior of the Bronzed Grackle *(Quiscalus quiscula aeneus)*.

I began banding birds in early summer in the year 1924, and I have operated a station since that time, except from May 19, 1925, to July 31, 1927; and November 2, 1945, to December 16, 1945. To date I have banded 151 Bronzed Grackles, and all were banded near McMillan, Luce County, Michigan.

The first Bronzed Grackle that I trapped to band was on May 8, 1929. Since then, two years (1932 and 1945) slipped by with not a single grackle trapped

by me. Below is a table giving the number banded, repeats, returns, and also the number of recoveries received each year since the first capture was made.

Year	Number Banded	Repeats	Returns	Recoveries
1929	2	—	—	—
1930	15	2	—	1
1931	3	—	—	1
1932	—	—	—	—
1933	1	—	—	—
1934	1	—	—	—
1935	14	6	—	—
1936	22	2	—	—
1937	5	—	—	1
1938	7	—	—	1
1939	2	1	—	—
1940	42	2	—	—
1941	6	—	1	1
1942	4	—	—	—
1943	12	1	—	1
1944	15	—	—	—
1945	—	—	—	—
Totals	151	14	1	6

Two Bronzed Grackles that I banded October 20, 1930, were retaken on the same day, with No. A355404, my eighth grackle to band, giving me my first repeat record by being retaken fifty minutes before A355403 repeated. I got only 14 repeat records from the 151 that I banded, and these were from 11 birds. No. 34-308925 was the only bird that repeated more than once. It was banded April 15, 1935, and its four repeat records were on that same day. It repeated first in the same trap at the same place as of banding, and the other three times in my Glenhaven 4-cell trap and was taken from one of the cells once, and another cell twice. This was a female. Of the other ten birds that repeated only once each, five repeated on the same day they were banded; a male and three females not repeating at the location of banding, and a male that was retaken at the place of banding. The five grackles that repeated once, and not yet mentioned, were not trapped at the place of banding. These were: a female repeated two days after banding; a female three days later; a male four days later; a male 12 days later; and a male 31 days later.

My first and only return of the Bronzed Grackle came from the 59th bird of this species banded. It was ad. male No. 34-359045 banded April 19, 1937; return date, April 16, 1941; and not at the same location as on the date banded.

My first Bronzed Grackle recovery was from the second grackle that I banded. Below is a list of my recoveries. Band number, age, sex, date banded, date recovered, etc.

623805 ad. m. May 10, 1929. Nov. 15, 1929. Killed by S. Henderson at Round Lake, Illinois.

A355404 ad. m. Oct. 20, 1930. Dec. 19, 1930; shot by A. Briggs, at Holland, Missouri.

34-353755 ad. m. Apr. 18, 1936. Apr., 1937; taken in Menominee Co., Mich., by A. W. Clifford.

34-353756 ad. m. Apr. 18, 1936. Apr. 19, 1938. Killed at McMillan, Michigan, by Dean L. Young.

40-360701 ad. m. July 11, 1940. Oct. 2, 1940. Taken at McMillan, Michigan, by Merwin Monroe.

41-306614 ad. m. July 23, 1941. Oct. 27, 1942. Shot at Lena, Wis., by Mr. Mark Netzer.

Judging from the recoveries from outside Luce County, it appears that the migration route the species that frequent Luce County takes is around the north and west sides of Lake Michigan, then across the Straits of Mackinaw, or along the east side of Lake Huron.—Oscar McKinley Bryens, 231 South Main Street, Three Rivers, Michigan.

Wanderings of the Mockingbird.—The Mockingbird is usually considered a sedentary species and the majority of the birds probably live throughout their existence within a short distance of the nest. Banding records indicate that some birds do wander to considerable distances, though there is no evidence of anything like definite migration. We would expect these wanderings to occur principally near the northern limit of the range, but, actually, the majority of the long-distance recoveries are in the sections where the species is an abundant "resident." It has become apparent that journeys up to 20 miles are by no means extraordinary, but those beyond 75 miles seem worth recording.

In the list of individuals that follows an asterisk before the number indicates that the bird was known to be a bird of the year when banded.

*38-210044, banded at Nashville, Tenn., April 16, 1938, by Mrs. F. C. Laskey, and "captured" about 80 miles away at Camden, Tenn.

A287272, banded at Fairhope, Alabama, August 18, 1931, by Mrs. W. H. Edwards, was "taken" about 90 miles away at Lower Peach Tree, Alabama.

B226502, banded at Haddonfield, New Jersey, November 25, 1932, by Edward W. Marshall, Jr., was found dead May 25, 1935, at Shadyside, Maryland, about 110 miles away. The bird had repeated daily for three months at the banding station.

*36-215357, banded at Nashville, Tenn., June 23, 1936, by Mrs. F. C. Laskey, was found dead in March, 1937, at Rising Fawn, Georgia, about 110 miles from the banding station.

*A297380, banded at Nashville, Tenn., June 6, 1932, by Mrs. Arch Cochran, was found entangled in a thicket and released unharmed, May 22, 1933, at Corinth, Mississippi. This was a flight of at least 128 miles.

604325, banded at Thomasville, Georgia, April 12, 1930, by J. F. L'Hommedieu, was "caught" October 6, 1930, at least 135 miles away at Gulf Hammock, Florida.

*34-224540, banded at Nashville, Tenn., May 26, 1934, by Mrs. F. C. Laskey, was killed January 29, 1936, at Fulton, Miss., a distance of 160 miles.

*B161839, banded at Winfield, Alabama, July 6, 1931, by J. S. Brindley, was found dead about March 20, 1932, more than 160 miles away at Leroy, Alabama.

*40-226245, banded at Nashville, Tenn., June 1, 1940, by Mrs. F. C. Laskey, was found dead in April, 1942, at Cumming, Georgia, 200 miles away.

A270337, banded at Summerville, South Carolina, March 7, 1931, by William P. Wharton, was captured and escaped unharmed, about February 18, 1932, at Plymouth, North Carolina, about 290 miles distant.

35-331179 (probably a bird of the year), banded at Collinsville, Illinois, September 8, 1939, by Percy H. Miller, was found dead January 14, 1940, at New Brighton, Beaver Co., Penn. This indicates an extraordinary flight of at least 500 miles. The band was sent to the bureau.—May Thacher Cooke, U. S. Fish and Wildlife Service, Washington, D. C.

Cardinal not always Sedentary.—One of the many surprises that have come to light as a result of birdbanding is that species that have been supposed to be entirely sedentary in their habits sometimes make fairly long journeys. The following records for the Cardinal are an example. In all probability most of the individuals of this species live out their entire existence within a mile or two of the nest, but banding has demonstrated that a few of them have been really adventuresome.

35-204712, banded at Sutherland, Iowa, September 26, 1935, by Gustav J. Schultz, was found dead November 1, 1935, at Newell, Iowa, about 35 miles away.

A293311, banded at Sioux City, Iowa, December 24, 1931, by Mrs. Marie Dales, was found dead May 11, 1932, about 80 miles away, at Santee, Nebraska.

B270818, banded as an immature, at Battle Creek, Michigan, October 23, 1933, by L. C. Nielsen, was captured by hand in the early morning of December 14, 1933, by Dr. J. Van Tyne, at Ann Arbor, about 85 miles distance. The bird seemed to be suffering from cold but was released in good condition two hours later.

39-247157, banded as an immature, at Chevy Chase, Maryland, August 20, 1943, by A. E. Clattenburg, Jr., was found, slightly injured November 2, 1943, at Ranks, Lancaster County, Pennsylvania, a flight of about 85 miles.

36-120378, banded at Raleigh, North Carolina, May 29, 1938, by J. L. Primrose, was found dead December 26, 1939, at Winston-Salem, North Carolina, about 95 miles away.

41-202287, banded at Elberton, Elbert Co., Georgia, April 4, 1944, by P. B. Smith, was "found" January 18, 1945, about 105 miles north in Dickinson County, Virginia, 3 miles north of Herald.

37-231808, banded at Iowa City, Iowa, April 18, 1940, by C. G. Danforth, was killed by a train at Des Moines, Iowa, 110 miles distant.

35-208878, banded at Memphis, Tennessee, February 18, 1936, by Mrs. G. W. Govert, was killed about November 25, 1936, 145 miles away, 3 miles north of Russellville, Alabama.

37-237826, banded at Takoma Park, Maryland, March 10, 1939, by L. M. Ashley, was found dead July 20, 1940, almost 200 miles away, at New Kensington, Pennsylvania.—MAY THACHER COOKE, U. S. Fish and Wildlife Service, Washington, D. C.

RECENT LITERATURE

Reviews by Donald S. Farner and others

BANDING AND MIGRATION

1. Do Individual Birds Always Use the Same Migratory Route? (Zieht der einzelne Vogel stets auf demselben Weg?) Rudolph Drost. 1941. *Ardea*, 30(4): 215-223. Of the migratory birds banded at Helgoland prior to the end of 1940, six were recorded as returns in a later migratory period. These returns were as follows: one Continental Song Thrush, *Turdus ericetorum philomelos* Brehm; three European Blackbirds, *Turdus merula merula* L.; one Sky Lark, *Alauda arvensis arvensis* L., and one Pied Flycatcher, *Muscicapa hypoleuca* (Pallas). Up to the end of June, 1940, about 104,000 migrating birds had been banded at Helgoland. Of these 16,123 were *Turdus ericetorum philomelos;* 15,410 were *Turdus merula merula;* 2,530 *Alauda arvensis arvensis;* and 2,617 *Muscicapa hypoleuca.* In comparing these numbers with the above-cited data on returns there is little evidence to support a theory of repeated individual use of the same migratory route. Among the recoveries are those of the twelve migrating individuals for which the recovery data are such that the use of the same route as employed when they were banded is precluded. They are as follows: one *Muscicapa hypoleuca;* one Continental Robin, *Erithacus rubecula rubecula* (L.); one Fieldfare, *Turdus pilaris* L.; five *Turdus merula merula;* two *Turdus ericetorum philomelos;* and two European Woodcock, *Scolopax rusticola rusticola* L. The author concludes that individual migrants do not use repeatedly the same migratory route and that his data indicate frequent individual changes in migratory routes. The author further points out that, although this applies to the species under discussion, it is probably true for all species which migrate on a broad front. It will be interesting for operators of banding stations in America to examine their data from this aspect.—D. S. F.

2. Observations Concerning the Spring Migration of the Chaffinch, *Fringilla coelebs* L., in Nijmegen. (Waarnemingen betreffende den Voorjaarstrek van den Vink *(Fringilla coelebs* L.) bij Nijmegen.) D. A. Vleugel. 1943. *Ardea*, 32(3/4): 250-263. This study is based on counts of migratory finches at various localities in southeastern Holland. Between Nijmegen and Beek the rim of hills serve as guide lines causing the migrants to swerve abruptly eastward, thus avoiding the tree-less Ooijpolders. In 1934 and 1935 the migration began in the first third of March and on 17 April 1935 was still in progress to a certain degree. In localities with much woodland the numbers of observed migrating birds was higher (about 225 per hour) than in localities with little woodland (about 90 per hour); few or none were observed in the tree-less areas. A strong positive correlation between atmospheric temperature and numbers of observed migrating birds (with a lag of one day) was observed except in the event of otherwise unfavorable meteorologic conditions. In absolute numbers the greater part of the migration occurred when the wind was in the same direction as the course of migration. However, the greater daily rates occurred on days when the direction of the wind was against the course of the migrants. In general such days produced otherwise ideal conditions for migration.—D. S. F.

3. Bird Banding Activities in Belgium in 1941. (Oeuvre du baguage des oiseaux en Belgique. Exercice 1941.) Ch. Dupond. 1942. *Le Gerfaut*, 32(2): 33-37. This is a list of 64 returns and recoveries mostly recorded during 1941. Sixteen of the records are of the European Blackbird, *Turdus merula merula* L. The number of foreign recoveries is small because of war conditions.—D. S. F.

4. Bird Banding Activities in Belgium in 1942. (Oeuvre du baguage des oiseaux en Belgique. Exercise 1942.) Ch. Dupond. 1943. *Le Gerfaut*, 33(2): 56-58. This is a list of 42 returns and recoveries recorded during 1942, the unusually small number being attributable to suspension of banding activities and restrictions on international communications.—D. S. F.

5. Birds Banded in Foreign Countries and Recovered in Belgium. (Oiseaux bagués a l'étranger et retrouvés en Belgique.) Ch. Dupond. 1942. *Le Gerfaut*, 32(2): 38-39. This is a list of 26 foreign-banded birds recovered in Belgium. Eight are Starlings, *Sturnus vulgaris vulgaris* L., banded in Germany, Italy, Sweden, and the Netherlands.—D. S. F.

6. Recoveries of Foreign Banded Birds in the Netherlands. (Terugvondsten van in het buitenland geringde vogels, 18.) C. G. B. Ten Kate. 1944. *Limosa*, 17(2/3): 94-97. Thirty-three recoveries in eight species of birds banded in other countries. Eighteen are recoveries of the Black Headed Gull, *Larus ridibundus* L. An interesting recovery in this species was a bird banded on the nest at Ossendrecht, Belgium, July 26, 1939, and recovered in July, 1942, in Noord-Brabant.—D. S. F.

7. Recovery of Marked Birds. E. P. Leach. 1945. *British Birds*, 38: 347-350; 370-372. A number of longevity records are given—in the first paper: Rook, *Corvus frugilegus frugilegus* L., 12 years; two Starlings, *Sturnus vulgaris vulgaris* L., of 6 years, three of 7 years; Blackbirds, *Turdus merula merula* L., 6 and 7 years; Common Heron, *Ardea cinerea cinerea* L., 9 years; Widgeon, *Anas penelope* L., 7 and 8 years; Cormorant, *(Phalcrocorax carbo carbo* (L.)), 9 years; in the second paper: Sandwich Tern, *Sterna sandvicensis sandvicensis* Latham, 13 years. Starlings ringed in fall and winter in England were retaken in England, Holland, Denmark and Sweden.—M. M. Nice.

ECOLOGY AND POPULATION

8. The Breeding-Bird Population in the Woodland Parts of "Het Bosch" in Amsterdam in 1942. (De broedvogelbevolking in de boschgedeelten van "Het Bosch" van Amsterdam in 1942.) J. E. Sluiters. 1943. *Ardea*, 32(3/4): 139-163. "Het Bosch" is an area of about 2300 acres ("ongeveer 900 ha.") which occupies parts of three polders (areas reclaimed from the sea). Of this area 187 acres (75 ha.) have been planted with trees and shrubs. Planting of the woodland areas began in 1936 and continued through 1940. The plan followed was to plant woodland trees beneath a screen of alder. Among the trees planted were oak, ash, thorn ash, beech, birch, linden, poplar, etc. Underbrush such as hawthorn and elder were also planted. Although the author points out that a census of singing males is not necessarily a good census of breeding pairs because of unpaired singing males, and that this method has other shortcomings and difficulties, he nevertheless found it to be the most suitable. The census was conducted from 15 April to 23 June. He visited "Het Bosch" two to four times per week during this period customarily from an hour before sunrise to one or two hours after sunrise. Singing males were recorded on outline maps (scale 1:10,000) at the time of observation. The observations which were repeated, with certainty, three to five times over the spread of the season, were transferred to the master map as territory-occupying birds, and indicated by a sign at the place where the male sang most frequently. Some trouble was encountered in the cases of the European Blackbird, *Turdus merula merula* L., and the Song Thrush, *Turdus ericetorum ericetorum* Turton. These species sang for such a short period that there was not time enough to cover the entire area. To remedy this the author obtained the assistance of a colleague. The study was confined to the woodland parts (187 acres). The following paragraph is a summary of the observations in this area.

In the case of *Turdus ericetorum ericetorum*, 32 territories were found. This species was found to prefer breeding in the hawthorn. Food was obtained outside of the territories. It appeared that each territory contained a nesting pair. There were 30 territories of *Turdus merula merula*. Most of the nests were in the hawthorns. In this species also it was found that each territory contained a nesting pair. Most food-seeking was done outside the territory. The density of 16 territories per 100 acres (40 per square kilometer) compares closely with the 17 per 100 acres (43/km^2.) found by Heyder in Oederan and the 16 per 100 acres observed by Alexander in Rome. The White Throat, *Sylvia communis communis* Latham, was found to have 18 territories. This density, about 10 per 100 acres (24/km^2.), is very similar to that (25/km^2.) observed by Palmgren in southern Finland. Three territories of the Lesser White Throat, *Sylvia curruca curruca* (L.), were found, this being the first year in which this species nested in the area. In the case of the Garden Warbler, *Sylvia borin* Boddaert, 37 territories were found. Most of the nests were found in elders. With the Icterine Warbler, *Hippolais icterina icterina* (Vieillot), it was the dominant breeding species of the rich underbrush. Only in the open woodland parts without underbrush were there no Garden Warblers. There were four territories of the Chiffchaff, *Phylloscopus collybita collybita* (Vieillot), which is considerably restricted to the higher foliage trees. The Willow Warbler *Phylloscopus trochilus fitis* (Bechstein), was more numerous because it found a suitable biotope even in the youngest plantings. There were 19 territories established by this species. Three territories of the Great Reed Warbler, *Acrocephalus arundinaceus arundinaceus* (L.) were recorded. This is not a forest species; the territories were on two small islands and in forest area adjacent to water. A similar situation existed in regard to the Reed Warbler, *Acrocephalus scirpaceus scirpaceus* (Hermann); three territories were recorded. There were nine territories occupied by Marsh Warblers, *Acrocephalus palustris* (Bechstein). The biotope used by this species was one of undergrowth of tall

weeds, especially nettles, in areas where no digging had been done during the year. *Hippolais icterina icterina* was the dominant form of the woodland and with 52 territories it was the most abundant species. "Nevertheless I got, in this species, the strong impression that part of the singing males were unpaired, . . ." The Wren, *Troglodytes troglodytes troglodytes* (L.), was represented by a single singing male despite the fact that there were many suitable places for this species. A single pair of Tree Pipits, *Anthus trivialis trivialis* (L.) was recorded. There were six territories of the Carion Crow, *Corvus corone corone* L., each with a nest. The Continental Chaffinch, *Fringilla coelebs coelebs* L. was represented by two territories. It is suggested that this low density can be explained by the lack of older trees. There were 16 territories of Linnets, *Carduelis cannabina cannabina* (L.). Their territories were difficult to ascertain because the males frequently were outside of them. In the case of the Greenfinch *(Chloris chloris chloris* (L.)) there were five territories. This species presented the same difficulty as *cannabina.* A single Reed Bunting, *Emberiza schoeniclus shoeniclus* (L.), established a territory in the brush along a canal; it is not a breeding bird of the woodlands. Cuckoos, *Cuculus canorus canorus* L., were seen very frequently. This very interesting study is concluded with discussions concerning the absence of certain species, the development of the breeding-bird population, and the establishment of new species. The author regards comparison of his data with those of other authors as impossible because of (1) difference in methods, (2) difference in geographic position of the census area through which modifications in the bird population appear, and (3) difference in the age, composition, etc., of the woodland and brush parts of "Het Bosch." Whereas these are sound and valid points yet it does seem that a critical comparison with similar data from other localities and types of areas could have been very enlightening. This paper is not only an interesting contribution at the present time, but it will also serve as a very important basis of comparison for future studies in "Het Bosch" and elsewhere.—D. S. F.

9. Some Considerations Concerning the Cause of the Colonizations by Birds of the Zuiderzee Polders. (Enkele beschouwingen naar aanleiding van de vogelkolonisatie in de nieuwe Zuiderzeepolders.) J. Muller. 1944. *Limosa,* 17(2/3): 55-63. This is a discussion of the possible methods and causes of the colonization of the polders (low areas reclaimed from salt water by drainage) of the Zuiderzee. In the case of the Avocet, *Recurvirostra avosetta* L., it is concluded that colonization is accomplished by birds which are breeding for the first time since those which have bred previously return to the previous nesting localities. In the first year of colonization there were more rotten eggs, abandoned birds, and dead young than during the second year despite the fact that nesting conditions were better during the first year. This is interpreted as the result of the breeding activities of a population composed almost exclusively of birds breeding for the first time. The author postulates the existence of a "potential breeding reserve" composed mostly of the "younger generation." If the opportunity for colonization presents itself these birds breed in the newly available territories if not they are manifest as "oversummering" non-breeding birds.

The Beach Plover, *Charadrius alexandrinus alexandrinus* L., also colonized in large numbers. It is assumed in the case of this species also that the colonization was accomplished principally by young birds. The situation in the case of the Ringed Plover, *Charadrius hiaticula hiaticula* L., was different in that although migratory birds were common during the first season only a small number of the species nested. The author feels convinced that this cannot be explained by lack of suitable nesting conditions. Also previous investigations have shown that in this species there is an unvarying return of adult birds to the previous nesting localities, but that the young show some tendency to wander from the birth locality in selecting their breeding locality. It is concluded that the breeding birds

in the polders were young birds only and that the sparse colonization may be due to the fact that the Netherlands lie on the southern periphery of the breeding range of the species. Colonization by the Little Ringed Plover, *Charadrius dubius curonicus* Gmelin, was similar to that of *alexandrinus* with some older birds thought to have participated. With the Lapwing, *Vanellus vanellus* (L.), there has been a marginal colonization of Noordoostpolder from an already well-inhabited region. In this species it has been shown by banding studies that not only do the adult birds return to the previous nesting localities but also that the young show a similarly strong tendency to return to their birthplaces to breed. This leads to a surplus in the breeding area. If there are available territories very nearby they are presumably filled by first-year birds; this would account for the marginal colonization of the polder. If no territories are available nearby the first-year birds are non-breeders and are the beginners of the early migration (wegtrek).

In the case of the Reed Warbler, *Acrocephalus scirpaceus* Hermann, it is concluded that colonization occurs by the taking up of territories by first-year males who are unable to find territories near their birthplaces because of the earlier arrival of old males. In support of this the author compares the earlier spring arrival in Schokland (middle of May) and later arrival in the polder (last week in May). This species is contrasted with the Reed Bunting, *Emberiza schoeniclus* L. Both apparently colonized Noordoostpolder from Schokland. However, *scirpaceus* spread over the entire available terrain whereas *schoeniclus* remained restricted to a small area adjacent to Schokland. The author interprets this as indicating in *schoeniclus* a greater tendency to return to the birthplace to breed and the possible lack of the surplus of males which exists in *scirpaceus*. Whereas there is much in this paper that is speculative and based on indirect evidence, nevertheless it is interesting, stimulating and worthy of serious thought.—D. S. F.

10. The Expedition of the M. N. Gracioso through the Waters of Extreme Northwestern Mexico. (La Expedicion del M. N. "Gracioso" por aguas del extremo noroeste mexicano.) B. F. Osorio Tafall. 1944. *Anales de la Escuela Nacional de Ciencias Biologicas*, 3(3/4): 331-360. The author during April, May, and June, 1944, accompanied an expedition visiting the desert islands along the coasts of the Gulf of California and the west coast of Baja California. This expedition was sponsored by the recently organized "Guanos y Fertilizantes de México, S.A.," for the purposes of ascertaining the factors influencing the populations of the guano-producing birds and means for increasing them. The following are the guano-producing species of this region: (1) Brandt's Cormorant, *Phalacrocorax penicillatus* Brandt. The principal advantages of this species are its gregariousness, density within the colony, and large clutch. The principal disadvantage is the use of relatively large amounts of nesting material tending to reduce the quality of the guano. This species was found principally on small islands and isolated rocks on the west coast of Baja California but except for two rocks was not sufficiently abundant to use the available territory. The author is of the opinion that the elementary measures of protection would result in considerable increases in the sizes of the colonies of this species. Three other species of cormorants, tentatively identified as *Phalacrocorax olivaceus mexicanus* (Brandt), *Phalacrocorax auritus albociliatus* Ridgway, and *Phalacrocorax pelagicus resplendens* Audubon, occur in this region but, for one reason or another, are not important in guano production. (2) The Blue-footed Booby, *Sula nebouxi* Milne-Edwards, is the more southern of the two species of boobies occurring principally in the southern part of the Gulf of California. (3) Brewster's Booby, *Sula leucogaster brewsteri* Goss, occurs principally in the northern part of the Gulf of California. The California Brown Pelican, *Pelecanus occidentalis californicus* Ridgway, occurs in colonies on some of the islands but economic exploitation of its guano does not seem feasible and it is therefore not regarded as an important guano-producing bird.

In the Gulf of California the birds were found to feed principally on fish including: *Anchoviella compressa* (Girard), *Anchoviella delicatissima* (Girard), *Anchoviella helleri* Hubbs, *Harengula thrissina* (Jordan and Gilbert), *Opisthonema libertate* (Gunther), and *Sardinella stolifera* (Jordan and Gilbert). The cormorants on the west coast of Baja California were feeding principally on the anchovy, *Engraulis mordax* Girard; the California sardine, *Sardinops caeralea* (Girard), the "Sardina bacona," *Anchovia macrolepidota* (Kner and Steindachner), and the mackerel *Pneumatophorus diego* (Ayres). Crustaceans of the genus *Munida* were found in the digestive tracts of some birds.

Soft ticks of the genus *Ornithodoros* were found commonly; *Argas* was rare. Mallophaga were found commonly on the cormorants, boobies, and pelicans. Principal predators were found to be Wyman's Gull, *Larus occidentalis wymani* Dickey and van Rossem; the Yellow-footed Gull, *Larus occidentalis livens* Dwight; and Heermann's Gull, *Larus heermanni* Cassin. On occasion sea lions, *Zalophus californianus* Lesson, may detrimentally molest the birds.

It has been suggested that the number of birds has decreased from year to year. If this is accepted as true the following probable causes are suggested: (1) human activity, (2) climatologic changes, (3) reduction in food, (4) increase in predators. The author offers some evidence to support a conclusion of "ecologic depression" and consequently reduced numbers of birds in 1944. He is of the opinion that "with the protective measures already adopted and others under consideration, it will be possible to have an important annual crop of guano that will be of great value to Mexican agriculture."—D. S. F.

11. Adaptability of the Chukar Partridge to Missouri Conditions. Werner O. Nagel. 1945. *Journal of Wildlife Management*, 9(3): 207-216. A total of 1,838 Chukar partridges released at fourteen selected areas in Missouri were closely watched during a period of three years. The birds survived and bred quite well on some of the areas but were unable to maintain themselves anywhere because of the wandering habit which resulted in wide scattering and eventual disappearance of the colonies. The birds persisted longest in the mixed cover of farm lands but quickly disappeared from prairie lands, woodlands and marshlands. Nests containing two to nineteen eggs were found between May 5 and August 11. The incubation period at the game farm was 21.5 days. The average number of young produced by thirteen pairs was 14.6.—JOHN T. EMLEN, JR.

12. Some Observations on Stone Chats in North Cornwall. E. R. and E. D. Parrinder. 1945. *British Birds*, 38: 362-369. Fifteen pairs of *Saxicola torquata hibernans* (Hartert) were found breeding on a five-mile stretch of cliffs near Tintagel; twenty-two nests of twelve pairs were located. The Stonechat nests close to the ground but gorse bushes were an essential part of each territory, serving as look-out posts for food. Territories were about two acres in size. Nesting starts in late March and early April; five pairs raised one brood, two pairs two broods and five pairs three broods. "The average clutch size was 5.0 for the first broods, 5.7 for the second broods, and 4.2 for the third broods." Of 122 eggs laid 114 hatched (93.4 percent), and 111 nestlings flew (91 percent of the eggs laid)—extraordinarily high success for an open-nesting bird. The female incubates for half to three-quarters of an hour at a time and stays off the nest about 10 minutes. Some of the pairs remained on their territories all winter.—M. M. NICE.

13. The Status of Certain Species of Birds on the Lake Carl Blackwell Project. F. M. Baumgartner. 1945. *Proc. Oklahoma Acad. Science*, 25: 24-26. Observations on a made lake in north-central Oklahoma from 1939-44. Increase in the surface area from 1,000 to 3,000 acres has been accompanied by a larger fish supply and an increase in the numbers of Ospreys, Common Terns

and White Pelicans. Concomitant with the deeper water, food-plants for ducks were destroyed and the number of winter ducks has decreased. In 1939 a sizable population of cotton rats supported a large number of hawks and owls; during severe weather in January, 1940, the rodents died off and the birds of prey for the most part disappeared.—M. M. Nice.

14. The Nesting Biology of the Pied Flycatcher. (Die Brutbiologie des Trauerfliegenschnäppers (*Musicapa h. hypoleuca* Pallas).) Gerhard Creutz. 1943. *Ber. Verein. Schles. Ornith.* 28: 28 ff. Results of banding at nest boxes at Pillnitz near Dresden from 1935-1942. Of 71 nesting females 14 (20 percent) returned; of 554 nestlings, 8 (1.5 percent) returned. Sets averaged 6.08 eggs; females nesting for the first time averaged fewer eggs than did older birds. Bigamy was fairly common. Only one brood is raised. The female incubates and in some pairs is fed by the male. Of 738 eggs in 122 layings 466 young were fledged (63.2 percent), typical for hole nesters. Each pair fledged on the average 3.8 young.—M. M. Nice.

15. Some Examples of Commensalism in Birds. (Quelques examples de commensalisme chez les oiseaux.) Ch. Dupond. 1942. *Le Gerfaut*, 32(2): 48-53. A review of a number of observations of the nesting of small birds near or within the nest of larger birds. An interesting review of this subject.—D. S. F.

16. Winter Night Habits of Birds. A. D. Moore. 1945. *The Wilson Bulletin*, 57(4): 253-260. The title of this paper is misleading. The content is a theoretical discussion of the ways in which conduction, convection and radiation may affect heat loss in sleeping birds in enclosed or open roosting sites. Suggestions (untried) are made on ways to measure air temperature and wind movement at a roost.—John T. Emlen, Jr.

17. The Condition of the Colonies of Herons and Cormorants in Belgium after the War. (Situation des colonies de Hérons et de Cormorans en Belgique après la guerre 1940-1945.) Ch. Dupond. 1945. *Le Gerfaut*, 35(2): 67-70. In general the heronries and cormorant colonies were not extensively affected by the war. The heronry and cormorant colony at Coolkerke lez-Bruges were destroyed. The heronry at Furnes because of the defensive inundations performed by the Germans and the disappearance of the trees, is being destroyed. A new colony of cormorants, which increased to 65 nests in 1945, was established at Woumen near Dixmude. The herons at this locality increased from two pairs in 1938 or 1939 to 80 nests in 1945.—D. S. F.

PHYSIOLOGY

18. Resistance to Hunger in Birds. S. Charles Kendeigh. 1945. *Journal of Wildlife Management*, 9(3): 217-226. English Sparrows, as they were removed from traps, were placed in small individual cages in a darkened room without food or water. Survival time was found to be closely related to environmental temperatures, being longest (67.5 hours) at 29° C. Greatest loss of body weight before death coincided with longest survival at middle temperatures. Death was attributed to exhaustion of energy reserves only between temperatures of 21° and 35°; below 21° death occurred from inability to maintain the required rate of heat production, above 35° it occurred from inability to maintain the required rate of water evaporation.

Survival without food fell below 14.5 hours, the length of a mid-winter night, at —18° C., which thus becomes a critical temperature for survival of the species in the field.

A smattering of observations on various other species by the author and others indicates a direct correlation of survival time with body size, stored fat and metabolic rate. The relation of hunger resistance to winter survival and winter distribution of several species, and the probable influence of special feeding and roosting habits are briefly discussed.

This paper is a valuable contribution to our understanding of the fundamental factors which determine distribution and survival of bird populations.—JOHN T. EMLEN, JR.

19. The Occurrence of the Incubation-Patch in Some Brazilian Birds. David E. Davis. 1945. *The Wilson Bulletin*, 57(3): 188-190. In a series of about 1,000 birds collected during the breeding season, 43 species showed brood patches in one or both sexes. The occurrence of the patch, as to sex, invariably agreed with the incubation habits of the species when these were known.—JOHN T. EMLEN, JR.

20. The Question of Erythrism. (Het vraagstuk van het erythrisme.) W. Ph. J. Hellebrekers. *Limosa*, 17 (2/3): 84-88. A brief discussion of the occurrence of erythristic eggs among birds based largely on information in the literature with some observations made by the author.—D. S. F.

REPRODUCTION

21. Supplementary Notes on the Diving Petrel. L. E. Richdale. 1945. *Trans. Roy. Soc. New Zealand*, 75, Part I: 42-53. Further data on the Kuaka, *Pelecanoides urinatrix* (Gmelin), on Whero Island, gathered in fourteen weeks in three nesting seasons between December 1, 1942, and February 12, 1944. "There is a tendency for pairs to remain together in subsequent seasons." "The Diving Petrel changes guard daily during the incubation period." Twelve tables give information on weights and measurements of eggs, data on estimating age of chicks, details as to parental care, measurements of bills of young and adults, statistics on the population, etc. Once a chick has chipped the shell, it takes at least three days to emerge. "In 1942-43, it was noted that 60 eggs produced chicks, seven were addled, while two were deserted when found. This means that just over ten percent of the eggs incubated failed to hatch, which seems rather a high percentage."—M. M. NICE.

22. Studies of Central American Redstarts. Alexander F. Skutch. 1945. *The Wilson Bulletin*, 57(4): 217-242. Observations on breeding behavior and data on nesting are presented for three forms of the genus *Myioborus* (Compsothlypidae) studied in Central America. All three follow a similar general pattern in which nest building and incubation are performed by the female, while care of the young is shared by both parents. The Pacific Orange-bellied Redstart, *Myioborus miniatus hellmayri* van Rossem, differs significantly from the Costa Rican form, *Myioborus miniatus aurantiacus* (Baird), and the Collared Redstart, *Myioborus torquatus* (Baird), in pairing for the nesting season only, and in avoiding members of its species outside the breeding season. *M. m. aurantiacus* and *M. torquatus*, more terrestrial in habits, pair a few months after they are fledged and remain paired throughout the year. The author calls attention to the similarities in behavior between these warblers and the migratory, sexually dimorphic forms of North America. From his rather wide experience with neotropical birds he generalizes that "with few exceptions, all members of . . . a family of birds follow the same general plan of incubating eggs; and the species in which the sexes are alike in color behave very much the same as species in which the sexes

are greatly different. Contrary to the statements of theorists of the last century, the color of the plumage seems not to be correlated with incubation habits."—JOHN T. EMLEN, JR.

23. Polygamy in the Black-Tailed Godwit. (Cas de polygamie chez la Barge à queue noire.) A. de Bont. 1945 *Le Gerfaut*, 35(2): 65-66. The author presents data demonstrating that polygamy occurs in *Limosa limosa limosa* (L.). In the dense population observed by the author in Belgium the frequency of polygamy is placed at five percent.—D. S. F.

24. A Record of Breeding of the White-Fronted Goose, *Anser albifrons albifrons* (Scopoli), in the Netherlands. (Een broedgeval van de kolgans, *Anser a. albifrons* in Nederland.) Tsjeard Gs. de Vries. 1944. *Limosa*, 17(2/3): 82-84. A professional goose catcher has a flock of decoy geese consisting of Bean Geese and principally White-fronted Geese. Except during the catching season these geese have their freedom but nevertheless remain in the vicinity throughout the year; they feed and breed in the nearby swamps. In the spring of 1942 a wild young female *albifrons* which had wintered in the area failed to migrate. She flew about with the decoy geese and sought food with them. The following season she also failed to migrate and in May began the construction of a nest. There were constant attempts at copulation with one of the "tame" ganders. The nest was destroyed by boys. In 1944 she constructed another nest which on May 29 contained one egg. On June 2 she began incubating five eggs. (Two pairs of "tame geese" had young by this time.) However, she was disturbed by a dog and since she did not return the following day the eggs were collected because of the danger of frost and predation. The mean measurement of the five eggs was 416.6 x 258.9 mm. The mean weight was 628 grams; the mean weight of the empty shells was 60.1 grams. The incubation period for the decoy geese (same species) is 26-28 days.—D. S. F.

25. The Goshawk, *Accipter gentilis gallinarum* (Brehm), Nesting on the Ground. (Havik, *Accipiter gentilis gallinarum* (Brehm), nestelend op den grond.) H. F. A. Schweigman. 1941. *Ardea*, 30(4): 269. This interesting and unusual observation was made near Enschede, Holland.—D. S. F.

BEHAVIOR

26. Courtship and Allied Behaviour in Penguins. L. E. Richdale. 1945. *The Emu*, 44(4): 305-319; 45(1): 37-54. A detailed description, illustrated with seven superb photographs, of "Types of Behaviour" in penguins, particularly in the two species on which the author has made exhaustive studies—*Megadyptes antipodes* (Hombron and Jacquinot) and *Eudyptes sclateri* Buller. What some authors call "courtship" or "display," Mr. Richdale terms "love-habits." With penguins "love-habits are taking place with equal intensity during the *whole* period they are on the breeding grounds." "It seems established that very little of the love-habit behaviour in penguins has true 'courtship' value, *i.e.*, that it is used before and will lead up to 'marriage.' Some of it has a purely social significance, *e.g.*, saluting between males which the observer is aware are definitely known to each other. Much of it, however, if it does not serve as a bond to keep the family together, must have an emotional companionship value. Certainly it appears to be self-exhausting and as such has little connection with coition."—M. M. NICE.

27. Contribution to the Nesting Biology of the Pied Wheatear. (Beitrag zur Brutbiologie des Nonnensteinschmätzers *(Oenanthe pleschanka*

pleschanka (Lepechin) *).* Erich Eggebrecht. 1943. *Ornithologische Monatsberichte,* 51: 127-135. Very interesting account of behavior at the beginning of the breeding season of *Oenanthe leucomela leucomela* (Pallas) in the South Ukraine. On April 29 there were five females along a kilometer stretch of rocky slope; the females were stationary, while eight males courted them and fought each other. Four days later the females were still in the same places, but two of them had mates that drove off intruders. On May 5 all five pairs were established, but three unmated males were still present. One female was building at two nest sites; occasionally she sang, less loudly and more melodiously than the male. Nest territory and nest site are chosen by the female, while the boundaries of the territory are settled by the male.—M. M. Nice.

28. Nesting Behavior of Wood Warblers. S. Charles Kendeigh. 1945. *The Wilson Bulletin,* 57(3): 145-164. Notes on twelve species of Wood Warblers made during three summers on a twenty-one acre tract in east central New York State are summarized, and a common pattern of behavior is outlined. The plotting of all sight records on maps demonstrated localizations which, with the aid of local peculiarities of song, were interpreted as individual territories. Observations on behavior were made at fourteen nests.

Male territories are advertised by song and defended by chasing but rarely fighting. Females defend a smaller area near the nest. Song decreases markedly at the time the eggs hatch. Display is used in territory advertising and in courtship before coition.

In addition to the defended territory, a more extensive home range is found in individuals of some species, particularly after incubation has started at the nest.

Nest building is performed almost entirely by the female. Incubation from the laying of the last egg is normally twelve days, and the nestling period, eight to ten days. Both sexes feed the young. Periods of attentiveness and inattentiveness at the nest are well-marked.—John T. Emlen, Jr.

29. Contribution to the Knowledge of the Behaviour of the Oystercatcher *(Haematopus ostralegus* L.) G. F. Makkink. 1942. *Ardea,* 31(1): 23-74. Valuable, detailed observations and illuminating conclusions. First the "components of the behaviour" are described, with sketches showing various attitudes taken by the birds; then more general problems discussed. "In early spring the birds of the flock perform all possible sexual activities and in this way get acquainted with each other. Gradually more fixed relations are established. When mated the pairs leave the flock in search of a nest site, which is not a territory. This procedure is termed 'sociogamous mating,' opposite to 'territoriogamous mating' in species which begin with staking out a territory. Sociogamous species are nidifugous, territoriogamous species are nidiculous or remain with their young ones on the territory *(Vanellus, Phalaropus).*" p. 72. In "territorigamous species the mates become tied down to a distinct nesting site, whereas in sociogamous species the tie concerns the mate," p. 62, and the parents follow the young.

"The piping performance is considered as a procedure which brings the sexes together and stimulates them so much that fights between rival birds of pairs occur on the one hand and nesting activities between future mates on the other. . . . The pseudo-sleeping attitude . . . which occurs frequently in encounters" is considered "an attitude of inactivity occurring at the very moment of the balancing of two antagonistic impulses." Promiscuity is characteristic of Oyster-catchers both before and after pairing.—M. M. Nice.

30. Sexual Dimorphism in Voice and some Preliminary Observations Concerning the Behaviour of the European Coot. (Geslachtelijk geluidsverschil en enkele voorlopige mededelingen aangaande het gedrag van den Meer

koet.) D. Grimeyer. *Ardea*, 32(3/4): 273-278. The author describes a difference in the voices of the male and female European Coots, *Fulica atra atra* L. This was found to be the only usable character in the field. The difference in voice is correlated with a difference in the anatomy of the syrinx as described by W. Rüppell. There is described in some detail the slapping of the nest-floor with one leg while standing on the other. The author also makes note of the association of the coot with the common Pochard, *Nyroca ferina ferina* (L.) and the Tufted Duck, *Nyroca fuligula* (L.). He suggests that the coots obtain food which floats to the surface as a result of the "diving and bottom-rummaging of these ducks."—D. S. F.

31. Albino Purple Martin at Seattle Martin Roost. Earl J. Larrison. 1945. *The Murrelet*, 26(3): 45-46. This albino was pursued by a flock of "12,000-odd martins" prior to roosting. The flock reappeared without the albino of which no trace could be found.—D. S. F.

32. The Bathing of Struthious Birds. (Vom Baden der Straussenartigen.) Karl M. Schneider. 1943. *Ornithologische Monatsberichte*, 51(1): 34-38. The struthious birds in the Leipzig Zoo were supplied with two large water tanks; the Ostriches, *Struthio camelus camelus* L. and *Struthio camelus massaicus* Neumann, were never seen to bathe in water, but often did so in sand. Cassowaries *(Casuarius)* bathe often, Emus *(Dromaius novaehollandiae)* occasionally. The article is illustrated with eleven photographs.—M. M. Nice.

33. Strange Nesting Habits of Tree Sparrows in Bessarabia. (Besondere Nistweise des Feldsperlings in Bessarabien.) Fritz Frank. 1944. *Ornithologische Monatsberichte*, 52: 156-157. *Passer montanus montanus* L. is abundant in the villages of Bessarabia, but as all nesting places under roofs and in barns seem to be taken by *Passer domesticus* L., the Tree Sparrow nests between rocks in the wells, as many as five to a well and at depths from 50 cm to 5 meters below the level of the earth. Constant drawing of water by natives did not disturb the birds. These nesting sites are safe from predators, but might present dangers when the young leave the nest.—M. M. Nice.

34. The Display of the Corn-Crake. A. G. Mason. 1945. *British Birds*, 38: 351-2. Corn-Crakes, *Crex crex* L., were called up to a stuffed dummy "by imitating the crake-crake song with a pair of bones"; when the bird answered and approached, the experimenter in a blind stopped craking; most birds uttered a few crakes upon seeing the dummy, then made up a courtship display and finally attempted coition, whereupon a trap net was sprung upon them and they were caught and banded. Courtship and aggressive displays are described, and the former illustrated with photographs. The net was not used when the photographs were taken; on this occasion after twenty-three attempts at coition the bird "went away and returned with a green caterpillar, which it offered to the dummy. It eventually ate the caterpillar and resumed its display and attempts at coition." The results of the experiments are described in detail in the *Irish Naturalists' Journal*, 7: 226-237, 321-333.—M. M. Nice.

LIFE HISTORY

35. Observations on the Life History of the European Redstart. (Waarneminingen omtrent de levenswijze de Gekraagde Roodstaart, *Phoenicurus ph. phoenicurus* (L.).) C. J. S. Ruiter. 1941. *Ardea*, 41(4): 175-214. Very fine population study. Each year about fifty pairs of Redstarts were trapped from 1935-39 in nesting boxes on a wooded field of 275 hectares at Wageningen; they

were caught when the young were seven days old. There were 471 captures of adults; 1362 young were banded. Sexes are distinguishable by plumage, also first year birds. Of the adults that returned 32 per cent of the males bred again in the old box, 90 per cent within 225 meters of the former nesting place and only 3 per cent nested from 326 to 425 meters distant; 21 per cent of the females bred in the former box, 72 per cent within 225 meters and 17 per cent from 326 to 1200 meters distant. Twelve times pairs remated the following year, but eight times pairs had other mates the second year, although their former mates were present. Ten times a male was found feeding two broods, probably taking over the care of a family where the male had perished. The female builds the nest, laying the first egg five days after the start of building; when a brood is destroyed the first egg of the next set is laid six days after. In the rare cases of second broods the interval between the dates of first eggs ranged between 36 and 43 days.

The average date of first eggs of 61 females previously banded as breeders was May 11.8, of 76 unbanded females (supposedly young birds from other localities) May 15.4, and of 23 first year females banded in the nest May 18.7. The average number of eggs laid by these three groups was 6.51, 6.14, 6.04. By means of the terragraph or aphisigraph visits to and from the nest were recorded; the female was found to stay on the nest about 15 minutes and off it from 8-25. The number of periods off the nest throughout one incubation were: 23, 24, 27, 32, 28, 27, 28, 29, 30, 29, 32, 30. Incubation lasts 12-14 days. "In a nest with seven young, the parents brought in 21 feedings per young on the first day; this number gradually rose to 35 per young on the eighth day." Of the breeding birds 38 per cent returned; of banded young 6 per cent. Since some 79 per cent of fledged young apparently die before reaching breeding age, the author calculates that 23 per cent of surviving young return to their birthplace. If Lincoln's (*Bird-Banding*, 1934) supposition were true that "the location of the first nest is more or less a matter of chance anywhere within the natural range of the species," we could expect a young Redstart to return to its birthplace once in 100,000 years! Of the young that returned, 91 per cent nested within 225-1025 meters from the original nestbox. Some of the young were not found nesting until the end of the second year; the author calculated this was the case with 25 per cent of the young males and 58 per cent of the young females.—M. M. Nice.

36. Notes on the Life History of the Mexican Violet-ear. Helmuth O. Wagner. 1945. *The Wilson Bulletin*, 57(3): 165-187. In the Valle de México where this study was made the Violet-ear, *Colibri thalassinus thalassinus* (Swainson), is partially migratory; adult females, young and a varying number of adult males migrate southward in November and return in July.

One brood is raised on the summer range. Females start nest-building immediately on their arrival and, after completing the nest, look for a place where males are calling and displaying. One or more males respond to the appearance of a female, and a wild race ensues until one is successful in reaching the side of the female. The courtship performance which follows consists of a series of flights over the nesting territory of the female, terminating, presumably, in copulation. Females protect their 600-1000 square meter nesting territories against intruders. Males apparently pay no attention to the female after mating.

The compact nest is composed mainly of moss, but is at times lined with plant down stolen from neighboring nests of the White-eared Hummingbird. The nests of the latter may be destroyed in the process of robbery. The two eggs are incubated 16-17 days (one nest). The young, under favorable conditions, grow rapidly in size and attain full body weight in about two weeks; feathers, bill and body form develop during the remaining ten days in the nest with very little change in body size. The rate of development varies widely with weather conditions as they affect the frequency of feeding by the attending parent. This marked

response to the weather, it is suggested, may help to explain the variation in figures given in the literature for the nestling periods of several species of hummingbirds.—JOHN T. EMLEN, JR.

CONSERVATION AND WILDLIFE MANAGEMENT

37. Ratio of Reported to Unreported Duck Bands in Illinois. Frank C. Bellrose, Jr. 1945. *Journal of Wildlife Management*, 9(3): 254. The per cent of recovery of banded ducks by hunters has been used as an indicator of the total annual duck harvest. A previously unmeasured factor in these determinations has been the completeness of reporting by hunters taking banded birds. A questionnaire survey in 1944 indicates that about 75 per cent of the duck bands taken by Illinois hunters are reported. Applying this correction to the reported per cent of banding returns, and allowing for crippling losses at a rate measured in Illinois, the total annual harvest of ducks by waterfowlers is computed at about 11 per cent of the continental duck population.—JOHN T. EMLEN, JR.

38. Valley Quail Under Private Management at The Dune Lakes Club. Ben Glading, David M. Selleck, Fred T. Ross. 1945. *California Fish and Game*, 31(4): 167-183. An extremely high valley quail population (up to 4.8 birds per acre in late autumn) was built up by intensive habitat management on a tract of mediocre quail habitat in the coastal area of central California. Census methods included an adaptation of the Lincoln index, using locally trapped and introduced banded birds. In the years 1939-1941 more than one quail per habitable acre was killed during the annual hunting season; in 1941 the total kill plus the crippling loss was about two quail per acre. The ratio of young to adults in the fall population was 365 per hundred in 1940, 252 per hundred in 1941 and 141 per hundred in 1942, the decreasing ratio coinciding with a general decline in the total population.

The chief management methods employed were artificial feeding and predator control. Five hundred 100-pound sacks of steel cut corn were distributed over the area each year with the aid of a blower device mounted on a pickup truck and driven over the area three times a week. Bird predators were taken throughout the year with guns and traps, about 500 being accounted for each year in 1939 and 1940. Coincidentally about 150 mammalian carnivores and 2,000 rodents were trapped per year.

The remarkable response to management is attributed primarily to the predator control rather than the artificial feeding. The reasoning behind this interpretation is not clear to the reviewer since, despite control, the predator population was found to be higher here than on an unmanaged area with a low quail population a few miles to the south.—JOHN T. EMLEN, JR.

39. Vanishing New Zealand Birds. L. E. Richdale. 1945. *Otago Daily Times*, Dunedin, N. Z., pp. 58-72. 2/6. A vivid account of some of the birds on the unspoiled island, Big South Cape. The Robin, *Miro australis* (Sparrm.) (see review in *Bird-Banding*, Jan., 1944, p. 29); Southern Saddleback, *Creadion carunculatus* (Gmel.); and Bush Wren, *Xenicus longipes* (Gmel.), are in one of their last strongholds. If rats and cats should get onto the island the Bush Wren and Saddleback might well be exterminated as species; the author suggests the possibilities of transferring "some pairs to other islands, or to suitable places on the mainland where there is a biological niche. The Bush Snipe, *Coenocorypha auklandica*, is very rare; it is persecuted by the Weka, *Gallirallus*, which seems to have been introduced there. The Morepork, *Ninox novaseelandiae*, is an owl which is becoming rare. Mutton-birds, *Puffinus griseus* (Gmelin), or Sooty Shearwaters were present in amazing numbers and gave "the most weird and unearthly

caterwauling that one could possibly imagine, like hundreds of tomcats calling out simultaneously." On some rat-infested islands the Shearwaters have been almost exterminated. Extraordinary noises were made by the Korure or Mottled Petrel, *Pterodroma inexpectata* (J. R. Forster), once found over the whole of South Island. —M. M. Nice.

FOOD HABITS

40. Some Contributions Concerning the Food and Economic Importance of the Jackdaw, *Coloeus monedula* L. (Eenige gegevens over het voedsel en de economische beteekenis van de kauw *(Coloeus monedula).*) H. N. Kluijver. 1945. *Limosa,* 18(1): 1-11. This study is based partly on the answers to a questionnaire concerning the economic importance of the Jackdaw and partly on the analysis of the contents of 36 stomachs. It is concluded that the species is detrimental to agriculture because it eats the planted seeds and seedlings of many agricultural crops. A general increase in the population was noted. Stomach contents were 90 per cent of plant origin and 10 per cent animal. Of 36 stomachs with material in them, 33 contained plants or parts of plants of agricultural importance. The food carried to the young consists mostly of harmful insects. However, it is felt that, despite this destruction of harmful insects, the Jackdaw is still more harmful than beneficial to agriculture.—D. S. F.

41. Flushing Tube for Determining Food of Game Birds. Donald B. Vogtman. 1945. *Journal of Wildlife Management,* 9(3): 255-257. A double-tube stomach pump was developed for flushing out the crop contents of California Valley Quail and providing food samples for analysis. Seeds and grains were readily expelled, but leafy material offered some difficulty. A distinctive bait was used in trapping the birds so that it could be identified in the analyses and excluded from the record.—John T. Emlen, Jr.

PARASITOLOGY AND DISEASE

42. Population Trends and Blood Parasites of Ruffed Grouse in Ontario. A. Murray Fallis. 1945. *Journal of Wildlife Management,* 9(3): 203-206. Ruffed Grouse, according to the reports of cooperating observers in each of four zones, increased from 1935 to 1938, remained numerous from 1938 to 1941, then declined rather precipitously during 1942 and 1943. Blood parasites were numerous during the period of decline though the incidence of infection was less than during the decline of 1933-1934. Five types of blood parasites were found and a large number of birds contained two or more of them. It is noted that these multiple infections raise the question as to whether any are of pathogenic significance.—John T. Emlen, Jr.

43. Blood Protozoa from Birds. (Protozoarios sanguíneos de las aves.) Enrique Beltran. 1944. *Anales de la Escuela Nacional de Ciencias Biologicas,* 3(3/4): 361-366. This paper consists principally of a tabulation of the results of the examination of blood from 88 birds of 68 species taken in Chiapas, México. *Haemoproteus* was found in seven species, *Leucocytozoon* in six species, and *Plasmodium* in seven species. "Parasites very similar to *Aegyptianella pullorum* were found in two specimens of *Colinus virginianus.*" Microfilariae (unidentified) were found in 23 specimens of 17 different species. The table shows the discovered occurrence of the parasites according to organs (brain, lung, liver, spleen, blood). —D. S. F.

DISTRIBUTION

44. Notes on the distribution of *Phalacrocorax penicillatus* (Brandt) in the Gulf of California, and on the west coast of Baja California. (Notas sobre la distribucion de *Phalacrocorax penicillatus* (Brandt) en el Golfo de Cortes y la Costa Occidental de Baja California.) B. F. Osorio Tafall and M. del Toro Aviles. 1945. *Revista de la Sociedad Mexicana de Historia Natural*, 6(1/2): 85-93. Brandt's Cormorant, known as "pato baza," is the most important guano-producing species on the west coast of Baja California. This species occurs along the entire length of the coast, preferring the islands near the shore. Four west coast nesting localities have been previously recorded in the literature; three of these were visited by the authors and were found to be still in use. Nine additional west coast nesting localities were discovered. Also, the authors found what appears to be the first recorded nesting colony in the Gulf of California. This locality is White Rock (Roca Blanca) near Isla Partida. The size of the colony was about 150 nests. The birds were found to be feeding on the following species of fish: "*Harengula thrissina* (Jordan and Gilbert), *Opisthonema libertate* (Günther), *Anchoa helleri* (Hubbs), and *Centengraulis mysticetus* (Günther)," all of which are abundant in the surrounding waters. A female was found to be parasitized by *Contracaecum spiculigerum* (Rudolphi), a cosmopolitan nematode parasite of marine birds. The guano produced by this colony was found to be of good quality (10.95 per cent nitrogen). Brandt's Cormorant occurs on the west coast at all times of the year, although the numbers decrease markedly at the end of the reproductive season. For example, on Adelaide Island during the nesting season there are an estimated 40,000 birds, whereas by the end of August or the beginning of September the island is practically deserted. Because of the increase in numbers on the California (USA) islands during the winter the authors raise the possibility of a northward winter migration caused by a northward migration of the fish on which they feed.—D. S. F.

45. The Invasion by Bohemian Waxwings, *Bombycilla garrulus* (L.), in the Netherlands (1943-44). (De invasie van de pestvogel, *Bombycilla garrulus* (L.), in Nederland (1943-44).) Rinke Tolman. 1944. *Limosa*, 17(2/3): 63-68. The author summarizes more than two hundred counts and observations concerning the invasion of this species from November, 1943, to March, 1944. Similar invasions have been recorded in the Netherlands for 1903-4, 1913-4, 1921-2, 1931-2, 1932-3. In 1943 a flock of ten birds was observed at Amsterdam on November 1; slightly after the middle of the month they were common. In January and February the numbers decreased; however, a few were observed early in April. In general the birds were observed in flocks of 10-20, although one flock of more than 40 was observed. Principal foods used by the Waxwings were the fruit of the following plants: *Cotoneaster*, *Liguster*, hawthorn, rose, *Berberis*, *Taxus*, firethorn, *Prunus*, holly, thrush berry, Gelderse Rose. There is a single record (Haarlem) of feeding on insects and insect larvae.—D. S. F.

46. An Invasion of *Pterocles orientalis orientalis* (L.) in Belgium. (Une incursion de *Pterocles o. orientalis* (L.) en Belgique.) Ch. Dupond. 1942. *Le Gerfaut*, 32(1): 1-15. This paper was prepared on the basis of a suggestion made by G. van Havre before his death in 1934 and concerns the invasion of Belgium by Sand Grouse in 1917. An account of this invasion was recorded by Floericke (1919) in *Mitteilungen ueber die Vogelwelt*. The notes of van Havre speak of a specimen shot from a flock of about twenty at Morlanwelz (Hainaut), 12 April 1917 by a German medical officer; the following day he shot another and several others were taken during the same period by other officers. A water-color painting of a female collected by the medical officer is regarded as unmistakable as to identification. The range of this species includes the more arid areas

extending from Spain and Portugal through northern Africa to Asia Minor, Russian Steppes, Arabia, etc. There are occasional records for Germany, France, Hungary, Greece and Italy. There is a review of much of the biology and zoogeography of this species.—D. S. F.

47. The Flamingos of Bonaire. (De Flamingo's van Bonaire.) A. E. H. Swaen. 1943. *Ardea*, 32(3/4): 163-179. This is an interesting summary of the available information, beginning with the early explorers, on the colonies of Flamingos *Phoenicopterus ruber* L., on Bonaire Island, Dutch West Indies.—D. S. F.

48. Contribution to the Study of the Distribution of Breeding Birds in Belgian Lorraine. (Contribution à l'étude de la dispersion des oiseaux nicheurs en Lorraine belge.) Alfred van Beneden. 1943. *Le Gerfaut*, 33(1): 1-31. This paper contains a general description of the area and notes on 121 species.—D. S. F.

49. On the distribution of *Garrulus glandarius brandti* Eversmann. K. H. Voous. 1946. *Limosa*, 18(1): 11-22. The author presents an interesting series of observations and theories concerning the pre-Pleistocene distribution and post-Pleistocene movements and distribution of the races of *Garrulus glandarius*.—D. S. F.

50. Observations on the Ornithology of the Southern Zone of Vera Cruz. (Observaciones sobre la ornithologia de la zona sur de Veracruz, México.) Alexander Wetmore. 1944. *Revista de la Sociedad Mexicana de Historia Natural*, 5(3/4): 263-271. "In the extreme northeast of the large isthmus of Tehuantepec, in the southern part of the State of Vera Cruz, there rises the Sierra de Tuxtla, as an isolated mass of mountains, separated by extensive lowlands from the extreme Meseta central of México." Because of its isolated position the birds have been poorly known. The author visited this area during the months of March and April, 1939, and made a collection of birds. The collecting was continued in 1940 by Mr. Melbourne A. Carriker. The completed collection contains 291 forms with specimens of the majority of the species except for the more common aquatic birds. Most of the area belongs to the humid part of the Tropical Zone; however, in the high parts of the Sierra de Tuxtla and the Volcán de San Martín there is a small area of Subtropical Zone. Species typical of these zones are noted together with observations on their abundance. Also there are some notes on migratory birds from North America.—D. S. F.

51. Some Notes Concerning the Ornithological Discoveries in Eastern Siberia, Published in "Gerfaut," 1941, II. (Quelques notes sur les trouvailles ornithologiques de la Siberee orientale, publiees dans "Le Gerfaut," 1941, II.) Hans Johansen. 1942. *Le Gerfaut*, 32(1): 15-16. A series of corrections and additions to the paper of W. N. Scanlon, *Le Gerfaut*, 31(2): 67-73, 1941. (See *Bird-Banding*, 16(4): 152-153.)—D. S. F.

52. Another Breeding Record of the Hoopoe *(Upupa epops epops* L.) in Western Netherlands. (Wederom een broedgeval van de hop *(Upupa e. epops* L.*)* in Westelijk Nederland.) F. G. J. Boer and M. J. Tekke. 1944. *Limosa*, 17(2/3): 88-89. The breeding pair recorded in this paper produced three young.—D. S. F.

SYSTEMATIC ORNITHOLOGY

53. A Systematic Study of the Netherlands Bean Goose, *Anser fabalis* (Latham). (Een systematische studie van Nederlands rietganzen, *Anser fabalis* (Latham).) K. H. Voous. 1944. *Limosa*, 17(2/3): 41-55. The author presents evidence indicating that the subspecies *Anser fabalis fabalis* Latham is dimorphic,

the differences being principally in the morphology of the bill and in general coloration. The two forms are referred to as *arvensis* Brehm and *segetum* Gmelin. Because the Siberian taiga geese show the slender form of bill and rounded nail characteristic of *arvensis* and because the Tundra Geese show the thick form of bill with curved mandible and the oval nail characteristic of *segetum* the author proposes to recognize *arvensis* and *segetum* as ecologic races of the subspecies *fabilis*. He then proposes the following arrangement of the species *fabalis*.

Taiga Geese:

1. *fabalis fabalis* (Latham) forma *arvensis* Brehm
   Northern Europe, western Asia.
2. *fabalic sibiricus* (Alphéraky)
   Eastern Asia.

Tundra Geese:

1. *fabalis fabalis* (Latham) forma *segetum* (Gmelin)
   Northern Europe.
2. *fabalis rossicus* (Buturlin)
   Northwest Siberia.
3. *fabalis serrirostris* Swinhoe
   Northeast Siberia.

Assuming the author's interpretations and conclusions to be valid there is obviously the problem of adjusting his arrangement to acceptable trinomial nomenclature. *Anser fabalis rossicus* is added to the avifaunal list of Holland and western Europe. This is based on a male (Zoological Collection of the Amsterdam Museum) collected January 18, 1888, at Bunschoten (Utrecht).—D. S. F.

54. Birds Collected during the Whitney South Sea Expedition. 55. Notes on the Birds of Northern Melanesia. Ernst Mayr. 1945. *American Museum Novitates* No. 1294. 12 pp. Notes on the Cassowaries, grebes, herons, and hawks including nine new subspecies.—D. S. F.

55. Notes on the Taxonomy of the Birds of the Philippines. Jean Delacour and Ernst Mayr. 1945. *Zoologica*, 30: 105-117. The authors have recently been engaged in preparing a book on the birds of the Philippines (now in press), each author taking the responsibility for about half of the families represented. The taxonomic discussions here reviewed were also prepared independently by each author, and so indicated in square brackets in the original text, but each author is in agreement with the conclusions reached by his colleague.

The title is misleading; with the exception of the description of six new races from the Philippines and the discrediting of several subspecies described by others, the main reason for the publication of this paper seems to have been to indulge in a general orgy of genus lumping. There is no doubt but that the trend in the last twenty-five years has been toward the elimination of genera based on very minor structural characters, with more importance being attached to the obvious points of similarity. This is all as it should be if the genus is used in its primary function of indicating relationship, but there is no doubt in the reviewer's mind that, carried beyond its logical extreme, the genus can also be used to obscure relationships. The authors point out structural modifications, but dismiss them with such sweeping comments as "insufficient for generic distinction"; "loss of a morphological character rarely valid"; "do not constitute plausible generic characters"; "not sufficiently characterized," etc. In some instances the authors are probably correct, but the casual way in which currently accepted genera are rejected with some such sweeping statement as above provokes a feeling of irritation which increases with each repetition.

Furthermore, this sort of a paper by two well known senior ornithologists cannot help but exert a bad influence. The older ornithologists should feel responsible for setting an example of careful, accurate work, reasons for changes should be

explained, comparable cases cited and a general air of scholarly effort should prevade the article which would then inspire the confidence in their conclusions that mere assertions do not. It is to be hoped that in their forthcoming book on Philippine birds Messrs. Delacour and Mayr will amplify and substantiate the proposals they have made in their article under review.—J. L. PETERS.

LEGENDS

56. On the Ostrich which Puts Its Head in the Sand in Case of Danger, or: The History of a Legend. J. A. Bierens de Haan. 1943. *Ardea*, 32(1): 11-24. A scholarly search for the origin and history of this well-established myth; it is first mentioned by Pliny as hiding its head in bushes and this was the version generally followed, although an Arabian work on natural history published in 1371 speaks of "a heap of sand." "The belief that the ostrich when hiding its head thinks itself invisible to other creatures, is a very old one, the origin of which is lost in the mist of ages, and was handed over from one author to the other from antiquity till the 18th century."—M. M. NICE.

NEWS FROM EUROPEAN BIRD BANDERS

Since the end of the war many European ornithological journals have reached us, as well as considerable news of ornithologists. Most of the Dutch ornithologists survived; *Ardea* and *Limosa* were published continuously and in the latter reports of banding; Dr. Junge writes me that paper is now the limiting factor. In Belgium M. Dupond brought out *Le Gerfaut* with annual reports of banding. *L'Oiseau* was published in Paris throughout the war. Prof. L. A. Jagerskiold, director of banding under the auspices of the Goterborg Natural History Museum in Sweden, was killed, apparently in a hunting accident, in April, 1945.

Communication with Germany, Austria and Hungary is still very difficult. The *Journal fur Ornithologie, Ornithologische Monatsberichte* and *Der Vogelzug* were published through 1944. Dr. Stresemann has written us news of various banders. Ernst Schuz, Vogelwarte of the Rossitten Station on the Kurische Nehrung in East Prussia, founded in 1903 by J. Thienemann, is now in Ludwigsburg (Wurttemberg). Rudolph Drost, Vogelwarte of the famous Heligoland Station, started in 1904 by Hugo Weigold, is now in Gottingen. Jacob Schenk, leader of banding in Hungary since 1908, died in February, 1945. Werner Ruppell, who carried out brilliant homing experiments with Starlings, Swallows, Terns, and Hooded Crows, died of his wounds in July, 1945. —Margaret M. Nice.

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